

Missouri State Epidemiological Profile 2019

MO Behavioral Health Epidemiology
Workgroup
(MO-BHEW)

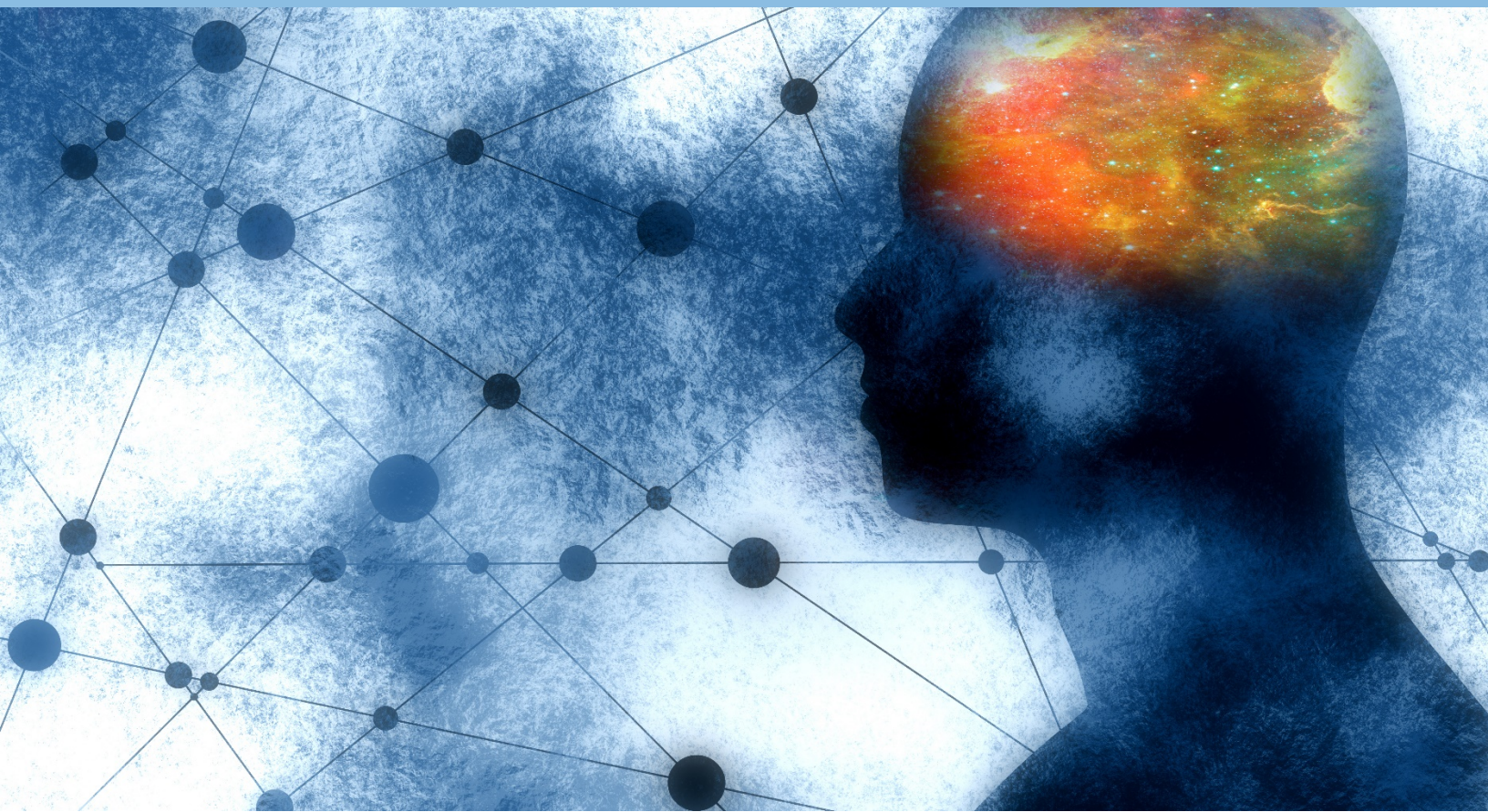


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Missouri Substance Use – Key Findings

Alcohol Use

51.1% of all Missourians aged 12 and older reported using alcohol in the past month while 25.7% reported binge drinking in the same time period.

These numbers have remained relatively steady over the last decade; the binge drinking rate is slightly higher than the national average.

Tobacco

21.3% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This is a number that remains well above the national average (18.5%).

Missouri has been higher than the national average for rate of deaths due to tobacco use for the last decade.

Marijuana Use

8.5% of all Missourians aged 12 and older reported using marijuana in the past month. This is a number that has increased slightly over the past few years and is similar to the national average.

Those in the 18-25 year old age group are most likely to have used marijuana in the past month, though the rate has been decreasing.

Missouri Mental Health – Key Findings

Depression

Rates for adults having at least one major depressive episode are typically higher in Missouri than nationally.

24.4% of Missouri youth said they were sad in the last month while 13.2% said they felt hopeless about their future.

Suicide

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade, and the rate continues to climb.

In 2018, 10.9% of Missouri youth made a plan to die by suicide.

LGBTQ & Military

Students who identify as LGBTQ are twice as likely as students identifying as heterosexual to report having suicidal thoughts or feeling sad or depressed “often” or “always”.

Although stable over time, suicide rates in Missouri among veterans are more than double those among civilians.



Introduction

Missouri is located in the Midwest. The geography of the state is largely rural, although over half of the population clusters around two metropolitan areas. Slightly over six million people make Missouri their home making it the 18th most populated state. Twenty-three percent (23%) of the population is under 18 years old, 61.4% are ages 19-64 and 15.7% are 65 and older. The population is primarily white (82.4%) with African Americans making up the second largest group (11.6%). Hispanics are a small group (4.0%), but growing. Less than 4% of the population is foreign born and approximately 1.1% of the households are limited English speaking.¹

Over ten percent (10.8%) of the adult population do not have a high school diploma while only 28.2% have graduated from a 4-year college. Over a third (36.8%) of the population ages 16 and older are not in the labor force. Around fourteen percent (14.6%) of the households fall below the poverty level. The median household income is \$51,542 and 17.6% of the population spend at least a third of their income on housing.¹

The Missouri Department of Mental Health (DMH), Division of Behavioral Health (DBH) is the state authority responsible for developing and implementing a statewide response addressing the impact of substance use disorder on Missouri families and communities. The DBH works collaboratively with other state and local agencies to ensure that the Missouri's response is comprehensive and appropriate. In the fall 2010, DBH submitted a request for a subcontract through Synectics to the Center for Substance Abuse Prevention (CSAP), a part of the Substance Abuse and Mental Health Services Administration (SAMHSA), to increase the epidemiological capacity of the state. As a result, the state was awarded a grant and formed the Missouri Behavioral Health Epidemiology Workgroup (MO-

¹ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF> U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

BHEW). One of the products of the MO-BHEW is a State Epidemiological Profile. The first Profile was completed Spring 2011. The State Epidemiological Profile provides an overview of the current available data on substance use and mental health across the state, including subpopulation data where possible. In addition, it discusses available Risk and Protective Factor data for the state, data gaps that need to be addressed, and final conclusions on the condition of the state.

For the past 17 years, the DMH has also produced an annual Status Report with data on alcohol and drug use across the state. The Status Report includes data from national surveys as well as available local data. This historical data collection, in combination with the indicators suggested by the federal funders, led to the choice of indicators covered throughout this report.

Lastly, MO-BHEW identified two high-risk subpopulations, lesbian, gay, bisexual, transgender or queer (LGBTQ) individuals and military personnel. While mental health and substance use data on these subpopulations are difficult to find, what is available is presented in this report.

Key Substance Use Measures



Alcohol Consumption

Drinking Rates

In 2016-17, 51.1% of all Missourians aged 12 and older reported using alcohol in the past month. This is a number that has remained relatively steady over the last decade and is similar to the national average.

Over twelve percent (12.2%) of Missourians aged 12-17 years reported drinking in the last month, compared to 56.3% of 18-25 year olds and 54.8% in the 26+ age group.

Those in the 18-25 year old age group are most likely to have reported drinking in the past month although the gap between the adult groups has been decreasing. Rates of use for those aged 12-17 years have increased slightly in the past few years.

Figure 1: Estimated Past-Month Alcohol Use (%): U.S. and Missouri Ages 12 and Older, 2002-2017.

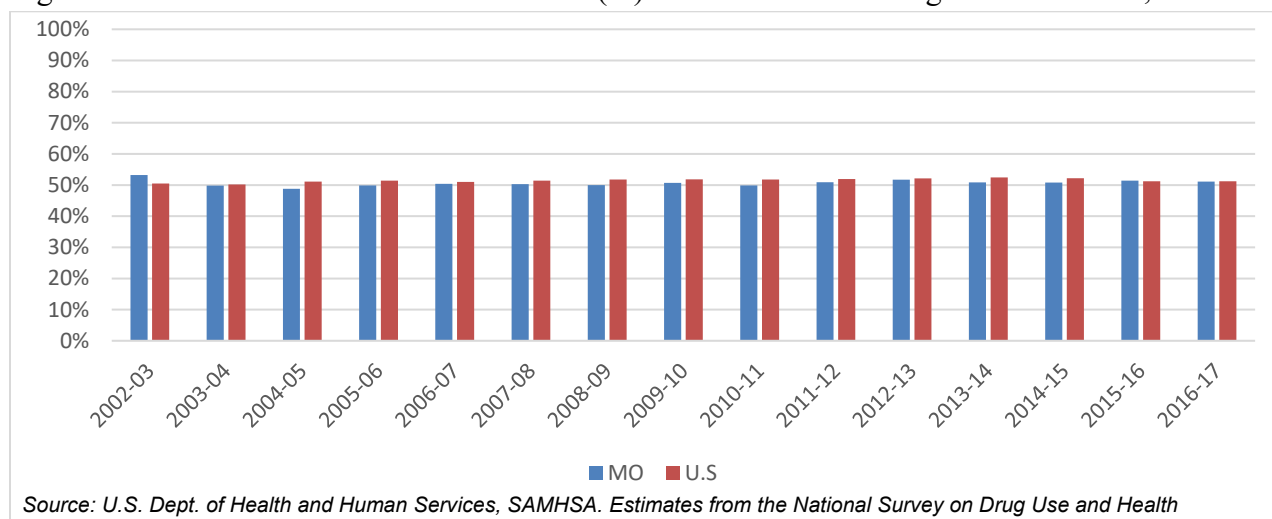
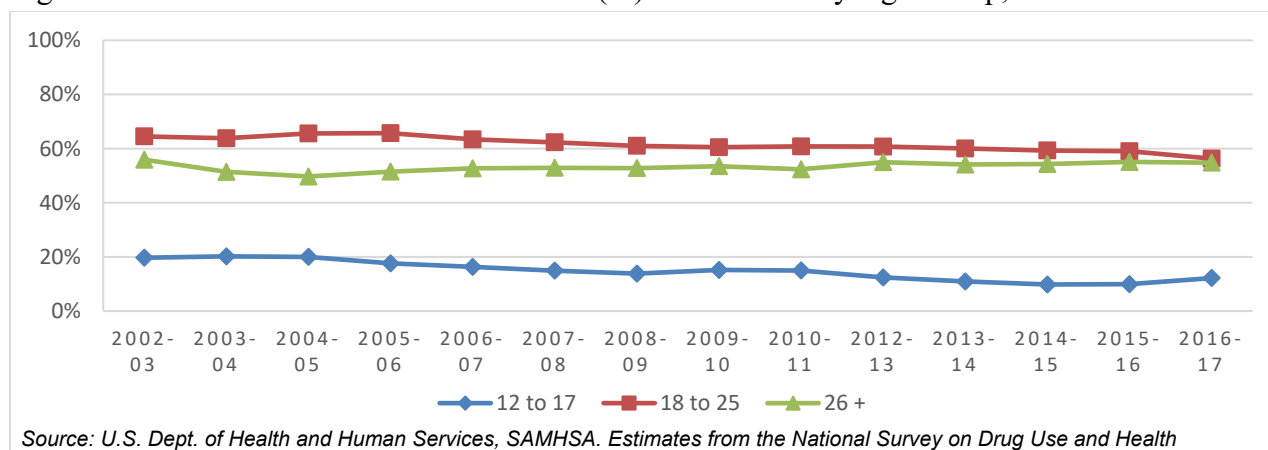


Figure 2: Estimated Past-Month Alcohol Use (%): In Missouri by Age Group, 2002-2017.



Age of First Use

In 2017, less than one in five (18.4%) of all Missouri high school students reported having their first drink of alcohol before the age of 13. This percentage has been decreasing over the last decade and is higher than the U.S average.

Males consistently report a higher percentage of drinking before age 13 than females. In 2017, the percentage of males initiating drinking before age 13 was 19.9% compared to 16.9% for females.

Missouri data for 2011 is not available.

Figure 3: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13, U.S. and Missouri, 1999-2017.

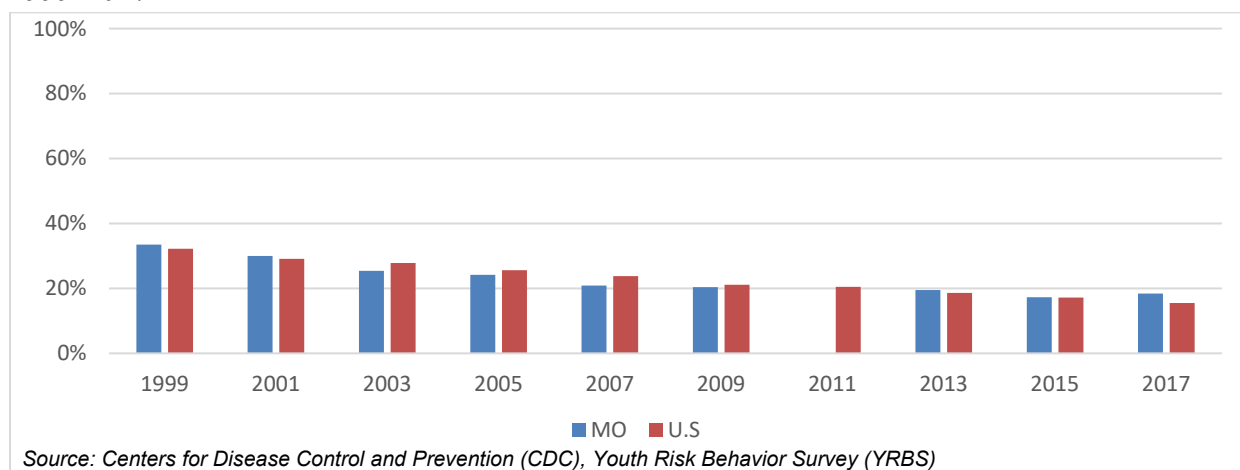
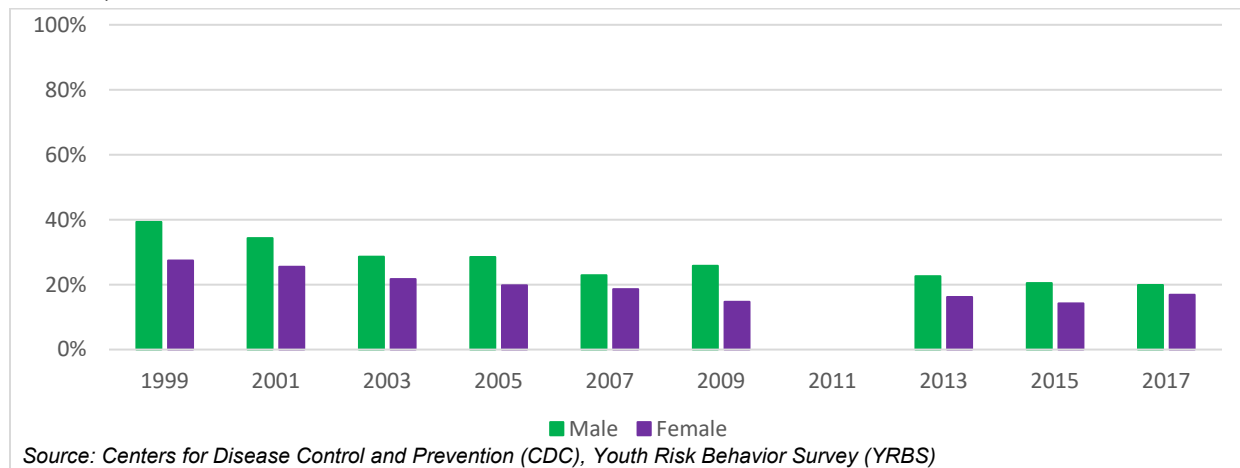


Figure 4: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13: In Missouri by Gender, 1999-2017.



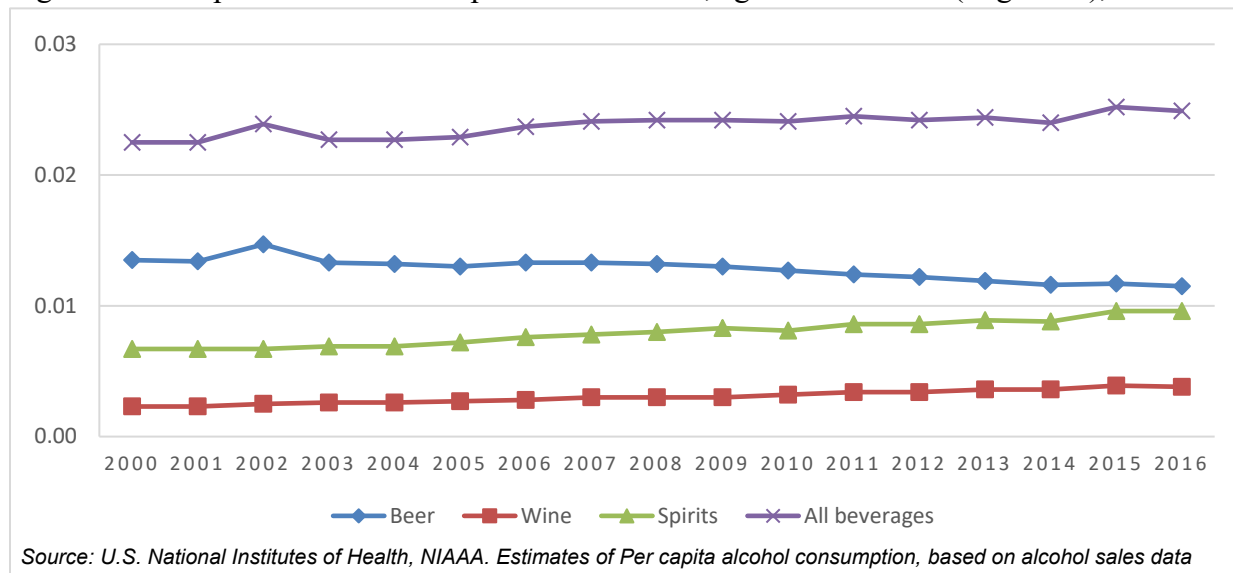
Per Capita Ethanol Consumption

Per Capita data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence.

The overall pattern of per capita ethanol consumption for Missouri is similar to that of the nation as a whole.²

Beer has the highest consumption rate for the state although the gap between that and wine / spirits has been decreasing.

Figure 5: Per capita ethanol consumption for Missouri, ages 14 and older (in gallons), 2000-2016.



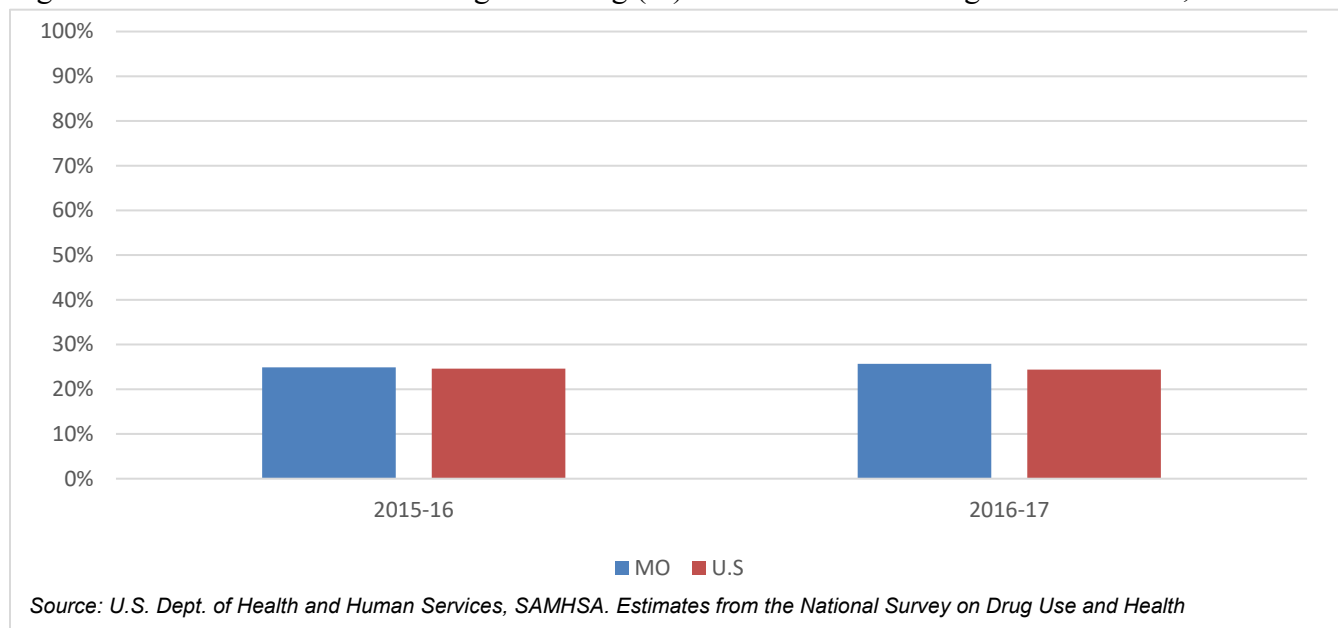
² <https://dmh.mo.gov/ada/rpts/documents/status2018-f13.pdf>

Binge Drinking

In 2015, the National Survey on Drug Use and Health (NSDUH) increased the threshold for determining binge alcohol use for females from 5+ drinks on one occasion to 4+ drinks on one occasion. Therefore, data from before 2015 are not comparable to current data. To review data prior to 2015, refer to the 2017 Missouri Epidemiological Profile.

In 2016-17, 25.7% of Missourians aged 12 and older reported binge drinking in the past month. This is the similar to the national average (24.4%).

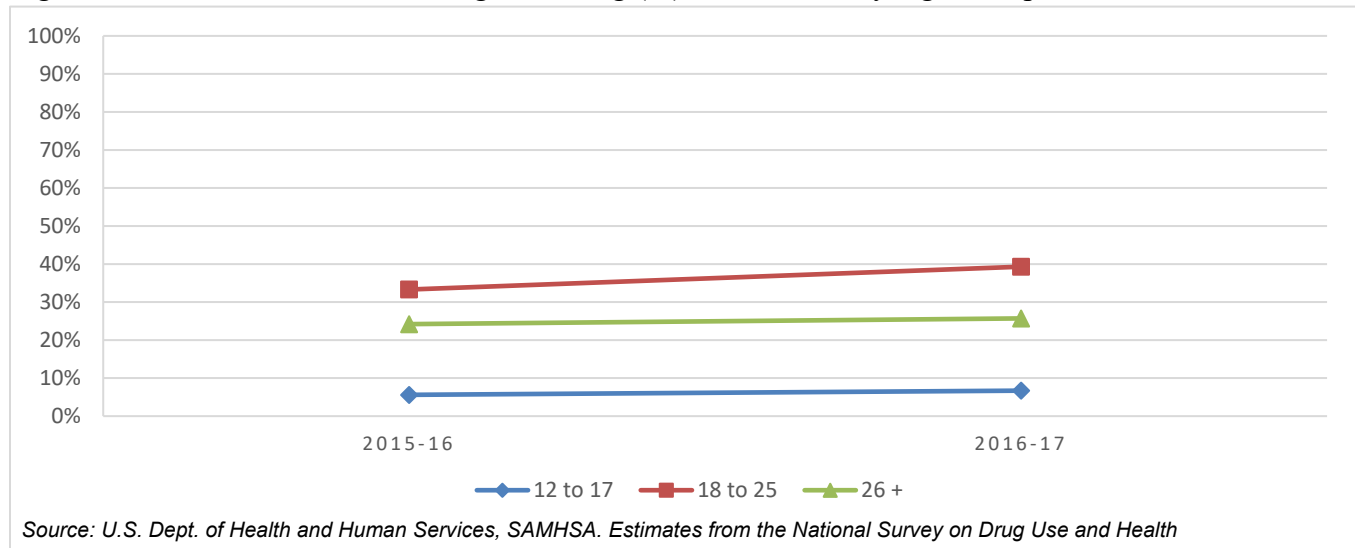
Figure 6: Estimated Past-Month Binge Drinking (%): U.S. and Missouri Ages 12 and Older, 2015-2017.



In 2016-17, 6.7% of Missourians aged 12-17 reported binge drinking in the last month. This compares to 39.3% of the 18-25 year olds and 25.7% in the 26+ age group.

As seen with overall drinking rates, those in the 18-25 year old age group are also most likely to have reported binge drinking in the past month.

Figure 7: Estimated Past-Month Binge Drinking (%): In Missouri by Age Group, 2015-2017.



When comparing the percentage of people who reported any drinking to those who reported binge drinking, it becomes clear that binge drinking is a concern, especially in the younger age groups. Of those under 25 who reported drinking in the last 30 days, over half of them engaged in at least one session of binge drinking.

Table 1: Comparison of 30 Day and Binge Drinking in Missouri, 2016-2017.

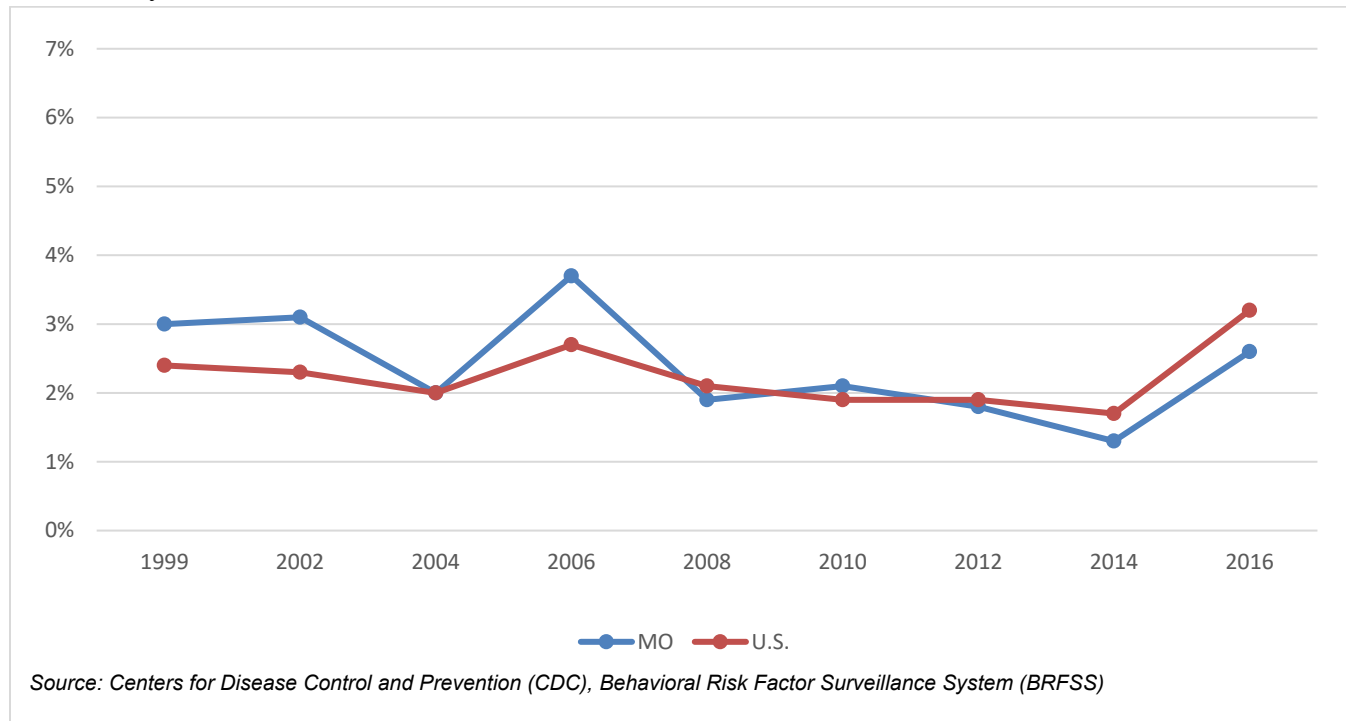
Age Group	% of Sample Reporting 30 day Use	% of Sample Reporting Binging in the last 30 days
12-17	12.2%	6.7%
18-25	56.3%	39.3%
26+	54.8%	25.7%

Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health.

Drinking and Driving

In 2016, 2.6% of Missourians reported at least one episode of alcohol impaired driving in the past 30 days. Both the state and national numbers have increased in the past several years.

Figure 8: % of Adults Aged 18+ Reporting at Least One Episode of Alcohol Impaired Driving in the Past 30 Days: U.S. and Missouri, 1999-2016.



Alcohol Consequences

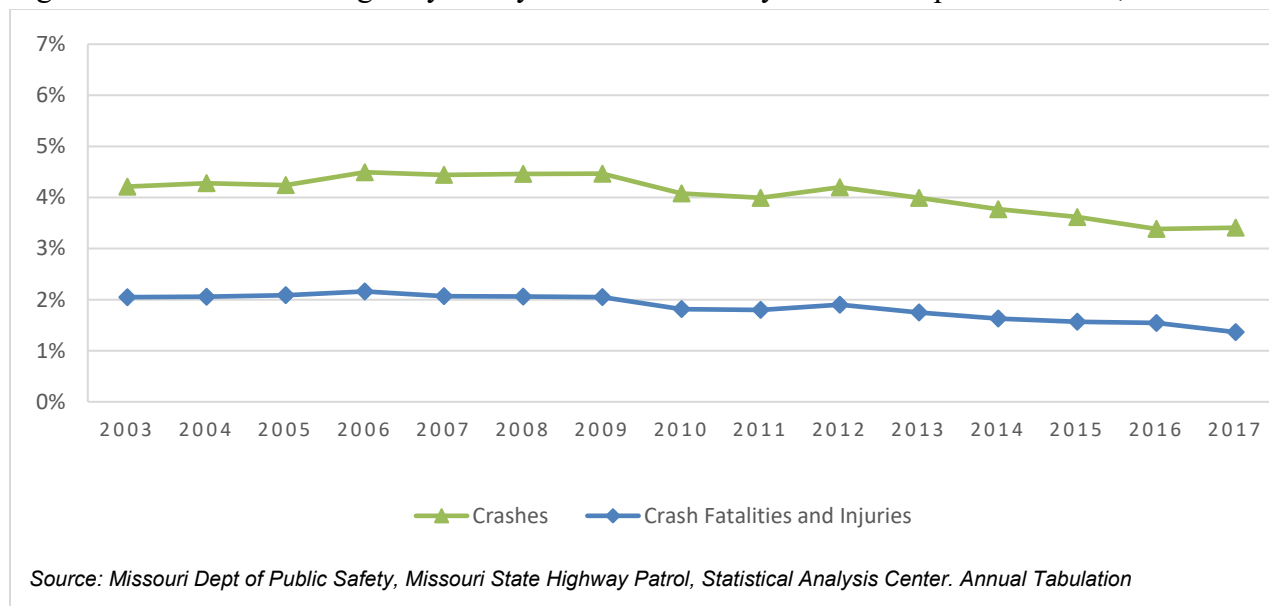
Traffic Crashes

Total traffic crashes in Missouri are on the decline, falling from 194,995 in 1998 to 153,422 in 2017.

The percentage of crashes that were caused by alcohol-impaired drivers have declined slightly over the last decade.

The percentage of crashes that were caused by alcohol-impaired drivers that resulted in fatalities or injuries has declined over the last decade.

Figure 9: % of Missouri Highway Safety Burden Caused by Alcohol-Impaired Drivers, 2000-2017.



Mortality Rates

Missouri has been lower than the national average for rate of deaths due to cirrhosis (chronic liver disease) for the last decade.

When looking at rates by demographics, men and Whites are more likely to die due to cirrhosis.

Figure 10: Rate of All Cirrhosis Deaths per 100,000 Pop: U.S. and Missouri, 1998-2017.

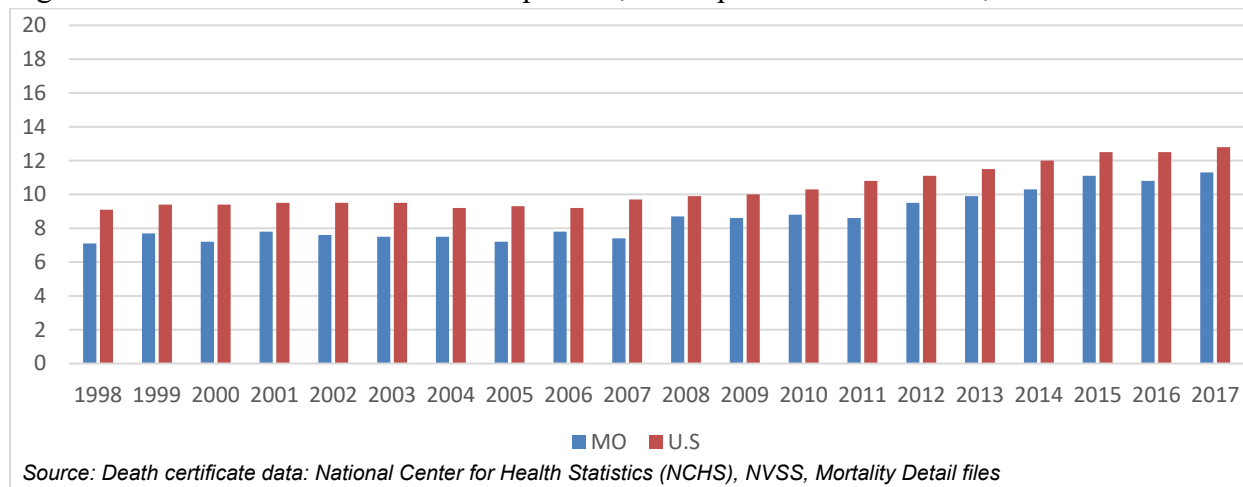
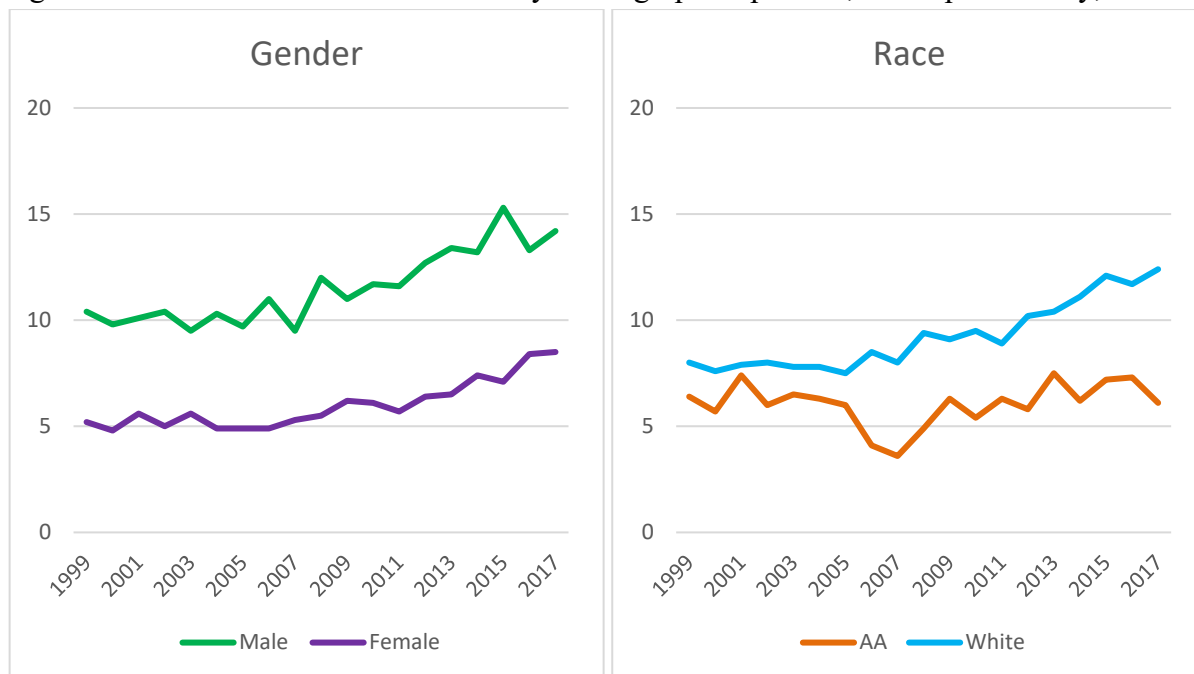


Figure 11: Rate of All Cirrhosis Deaths by Demographics per 100,000 Pop: MO only, 1998-2017.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Homicide rates have been higher than the national average in the last decade.

When looking at rates by demographics, men and African Americans are much more likely to die due to homicide.

Figure 12: Rate of Homicides per 100,000 Population: U.S. and Missouri, 1998-2017.

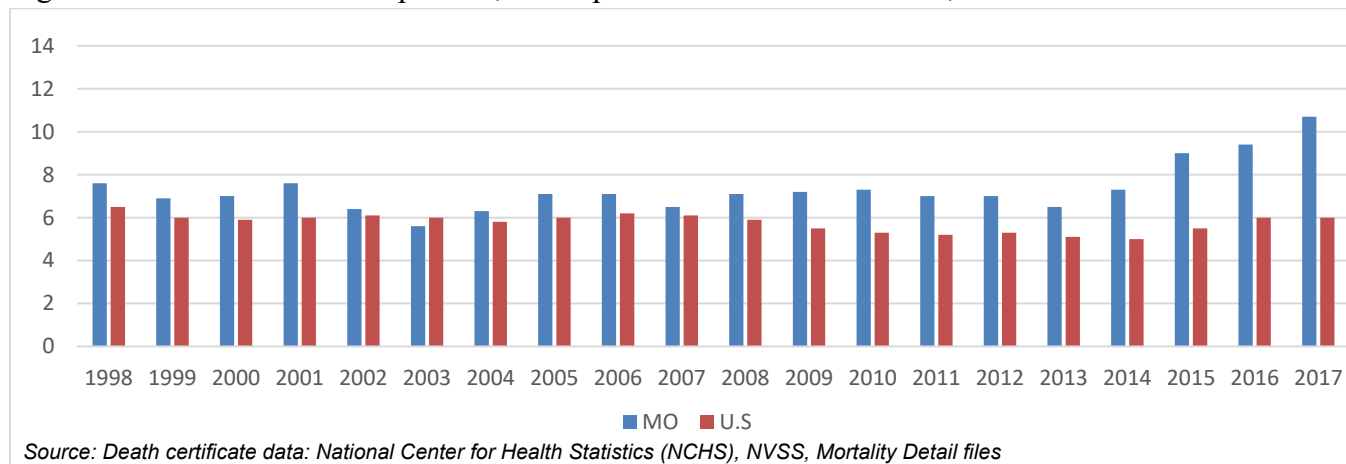
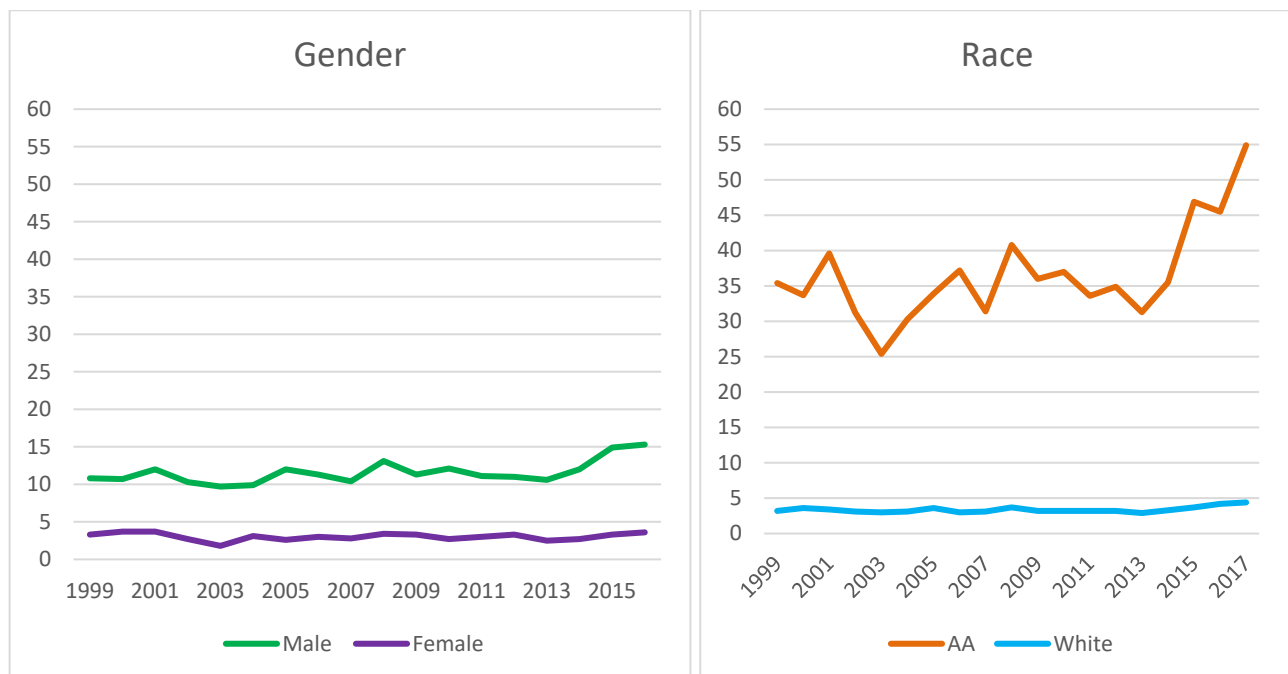


Figure 13: Rate of Homicides by Demographics per 100,000 Pop: MO only, 1998-2017.

NOTE: Change in Scale.



Tobacco

Tobacco Rates

In 2016-17, 21.3% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This is a number that remains well above the national average (18.5%).

In 2016-17, 6.1% of Missourians aged 12-17 years reported smoking cigarettes in the past month. This compares to 22.9% of 18-25 year olds and 22.8% in the 26+ age group. Those aged 18-25 year old have had a sharp decrease in usage rates over the past few years.

All age groups have decreased their use over the last decade.

Figure 14: Estimated Past-Month Cigarette Use (%): U.S. and Missouri Ages 12 and Older, 2002-2017.

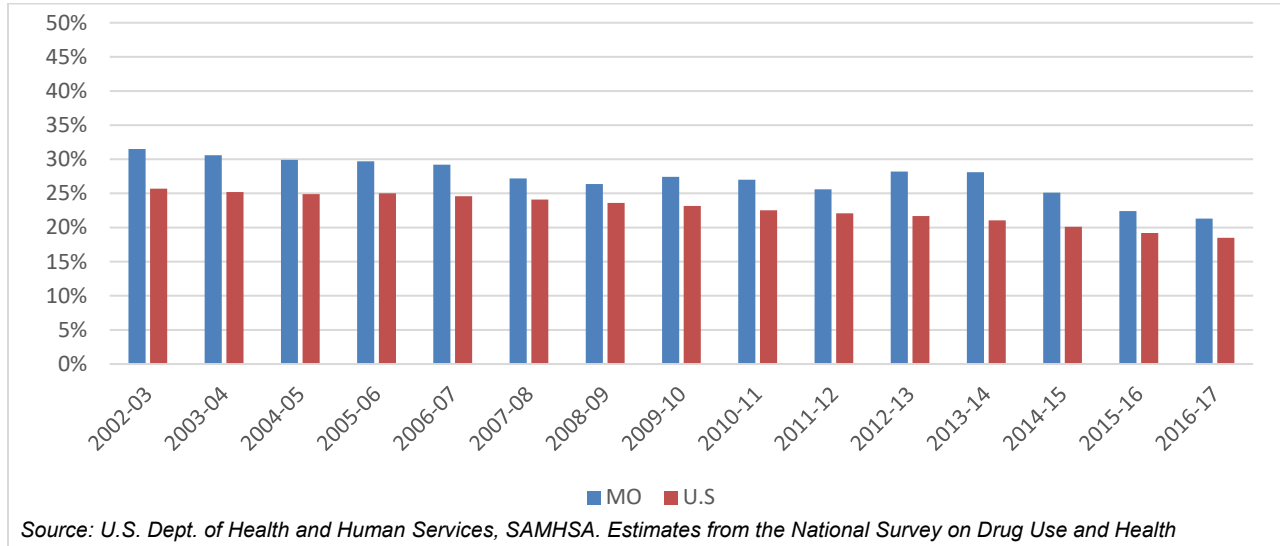
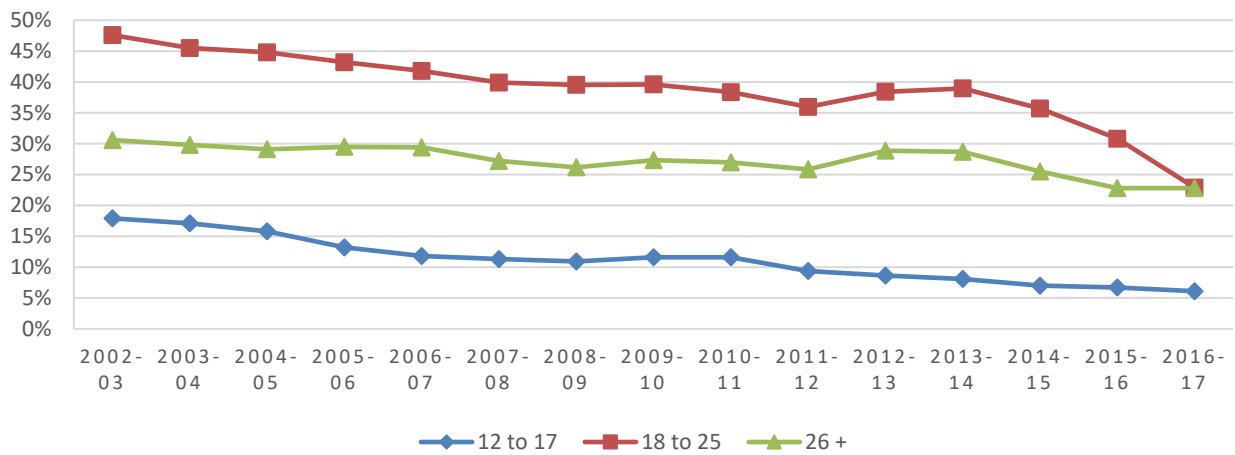


Figure 15: Estimated Past-Month Cigarette Use (%) in Missouri, By Age Group, 2002-2017.

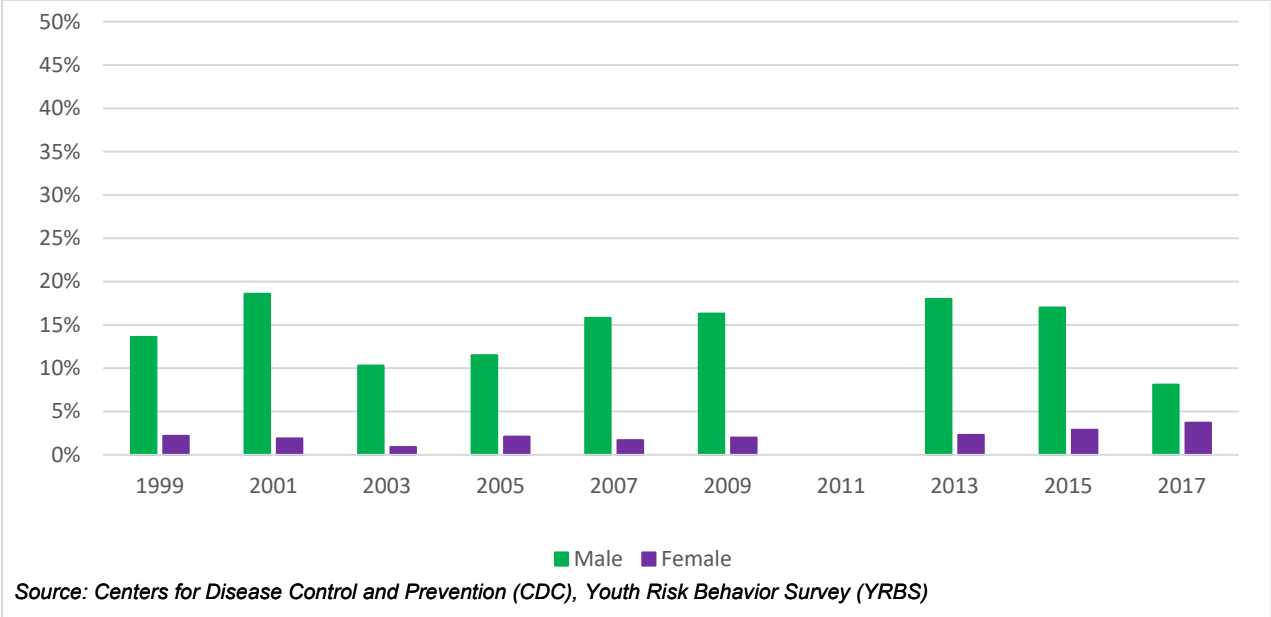


Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health

Males are much more likely to report using smokeless tobacco in the last month than females are.

Missouri data for 2011 are not available.

Figure 16: Estimated Past-Month Smokeless Tobacco Use (%) in Missouri, By Gender, 1999-2017.



Daily Use

In 2017, 16% of all Missourians aged 18 and older reported using smoking cigarettes daily in the past month. This is a number that is above the national average of 11.1%.

Males were slightly more likely than females to report daily smoking.

Figure 17: Estimated Daily Cigarette Use (%): U.S. and Missouri Ages 18 and Older, 2002-2017.

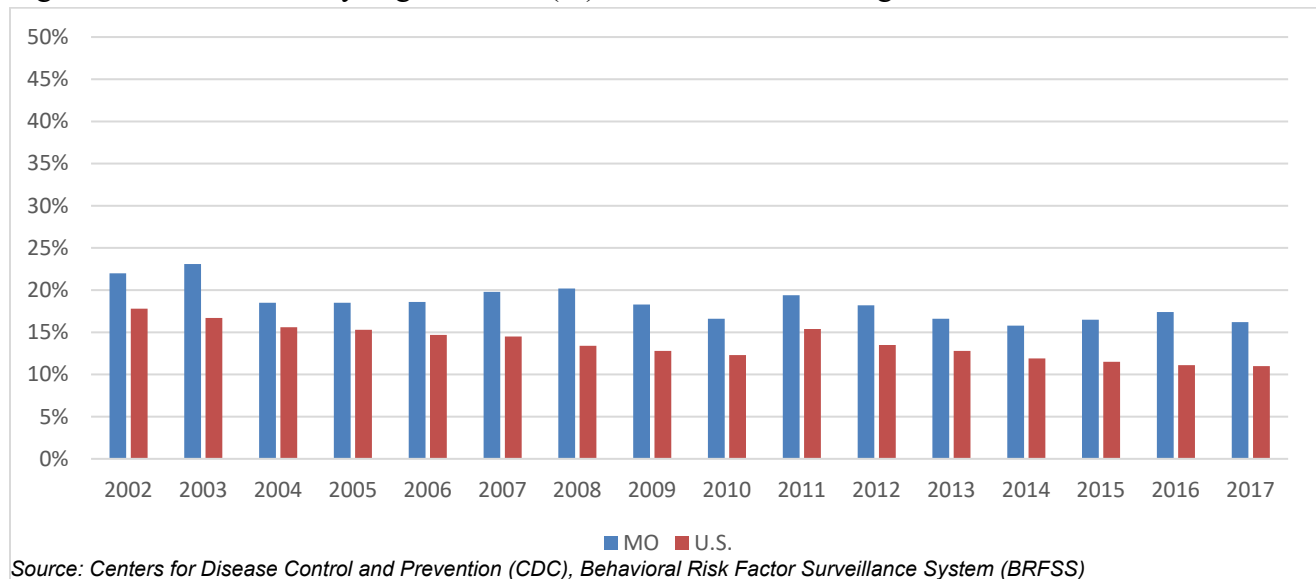
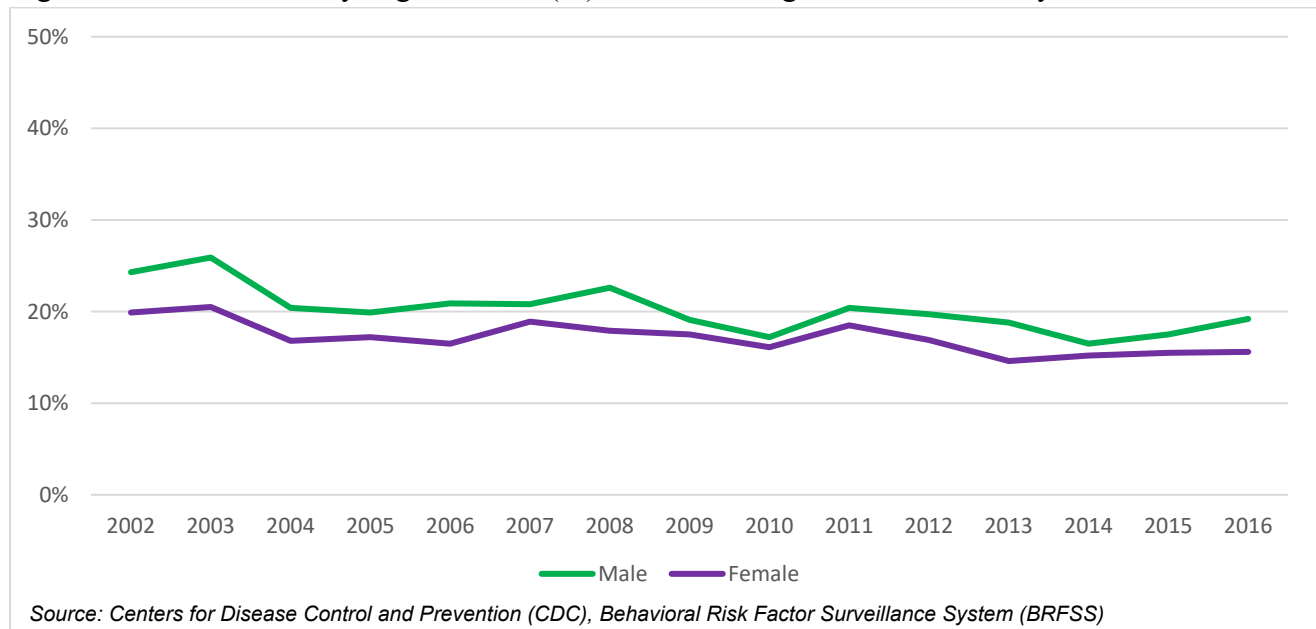


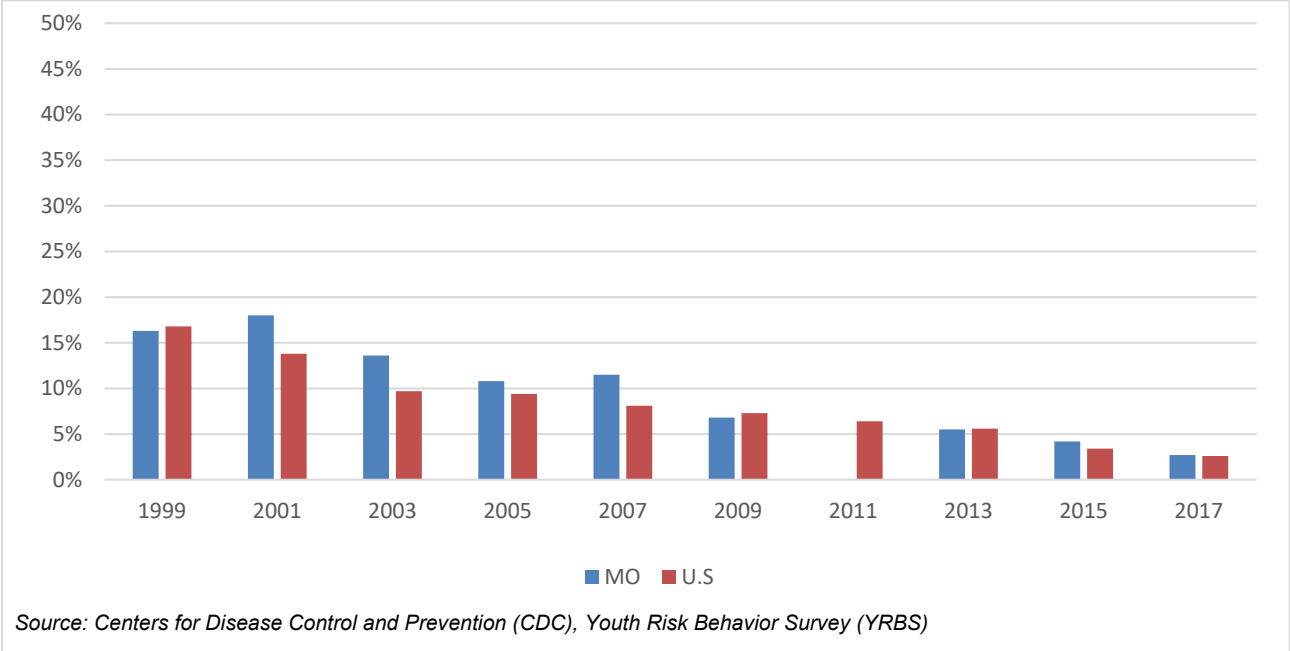
Figure 18: Estimated Daily Cigarette Use (%) in Missouri Ages 18 and Older, By Gender, 2002-2016.



When looking at high school students only, Missouri is close to national average for smoking cigarettes on 20 or more days of the past month.

Missouri data for 2011 are not available.

Figure 19: % of Students in 9-12 Grade Reporting Smoking Cigarettes on 20 or More Days within the Past 30 Days: U.S and Missouri, 1999-2017.



Age of First Use

In 2017, 9.8% of all students currently in high school reported using tobacco before the age of 13. This percentage has been decreasing over the last decade.

Males typically reported a higher percentage of tobacco use before age 13 than females. In 2017, the male percentage was 10.4% compared to 9.2% for females.

Missouri data for 2011 are not available.

Figure 20: % Students in 9-12 Grades Reporting First Use of Tobacco Before Age 13, U.S. and Missouri, 1999-2017.

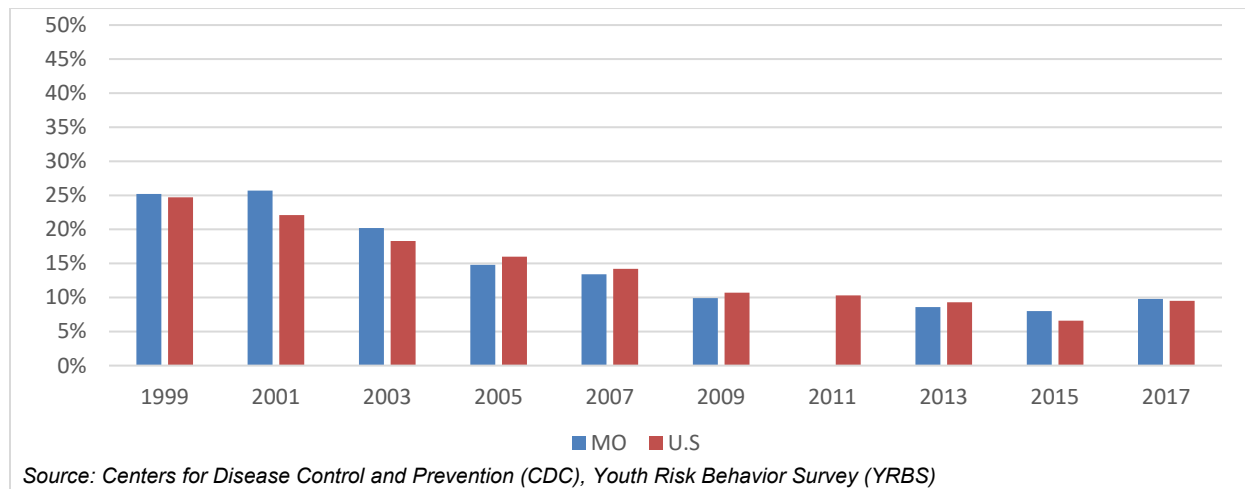
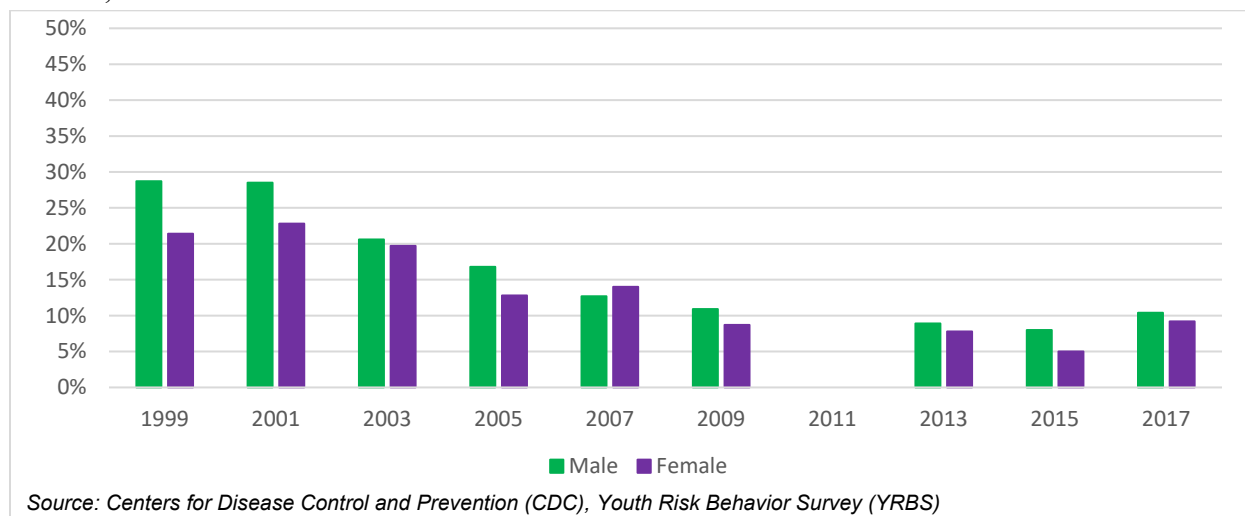


Figure 21: % Students in 9-12 Grades Reporting First Use of Cigarettes Before Age 13 in Missouri, By Gender, 1999-2017.

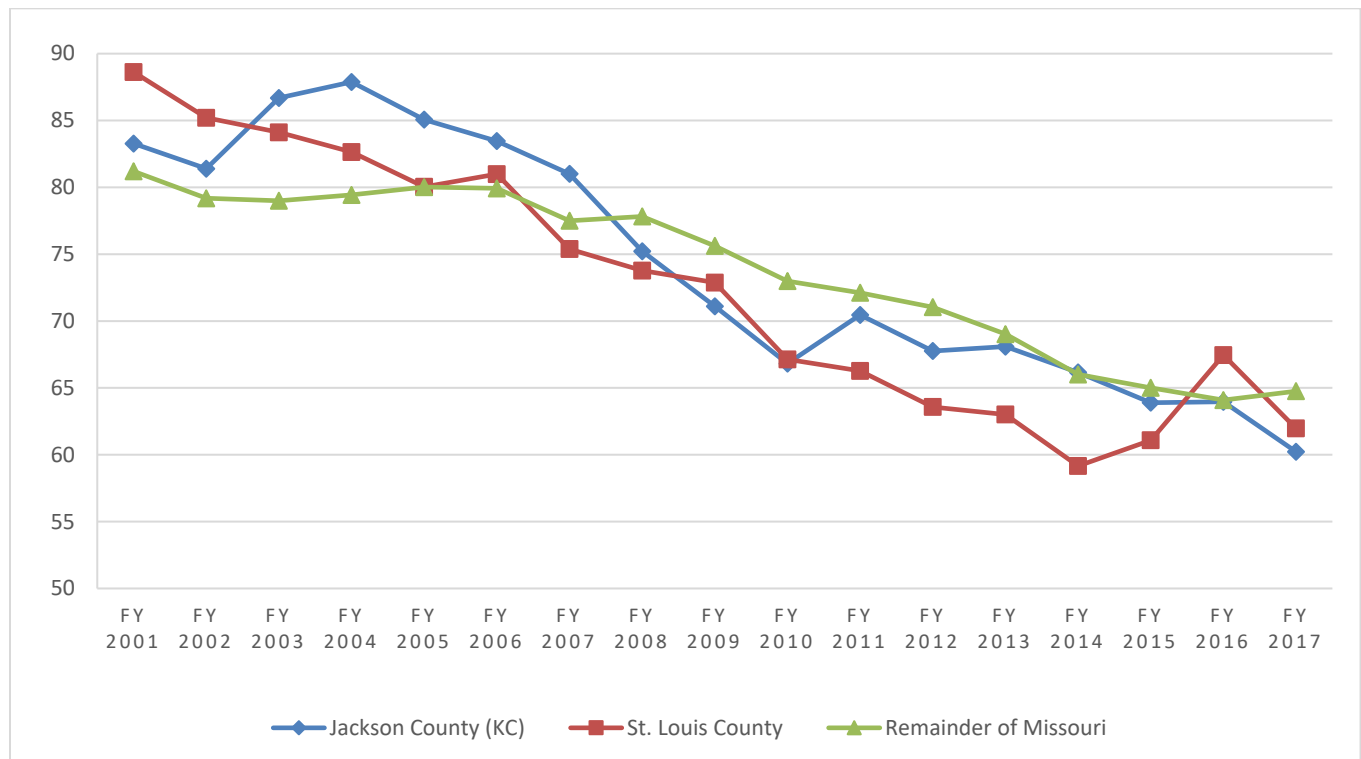


Per Capita Cigarette Consumption

Per Capita data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence.

Cigarettes sold per capita seem to indicate higher smoking rates in rural areas than in the major cities, although this number is declining. Jackson County rates have been similar to St. Louis County in recent years.

Figure 22: Packs of Cigarettes Per Capita Sold in Missouri Based on Cigarette Tax Revenues, by county, Fiscal Years 2001-2017.



Source: Missouri Department of Revenue. Annual revenue reports. Total cigarette sales estimates are based on the cigarette tax portion of tobacco tax receipts. Breakouts for Jackson County and St. Louis County are based on supplemental county cigarette tax receipts.

Tobacco Use during Pregnancy

In 2017, 14.3% of pregnant women in Missouri reported smoking during pregnancy. This is higher than the US rate (6.9%) but has been steadily declining.

When looking at rates by race, white women are more likely to smoke during pregnancy than African-American women.

Figure 23: % Births with Mother Using Tobacco during Pregnancy, U.S. and Missouri, 2012-2017.

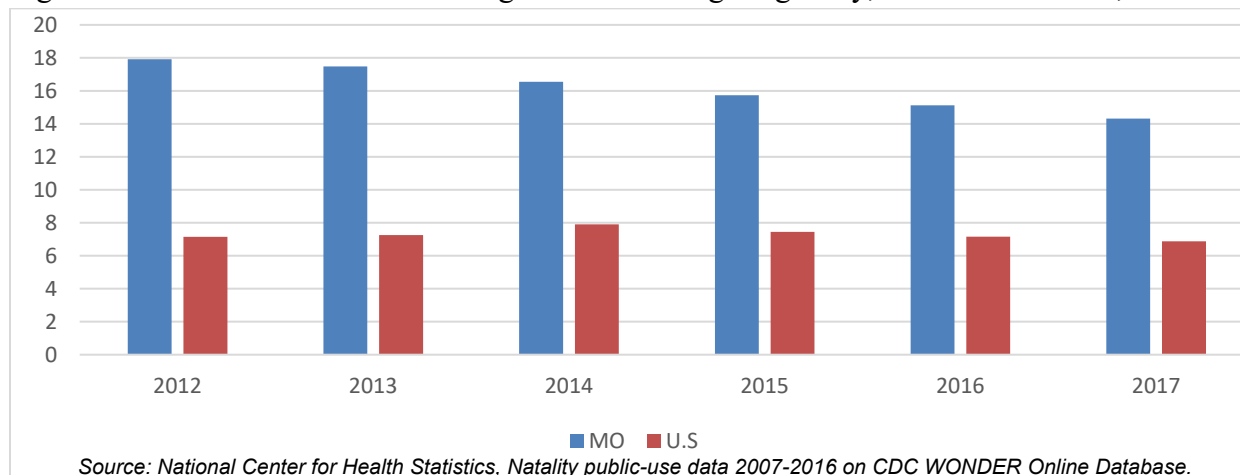
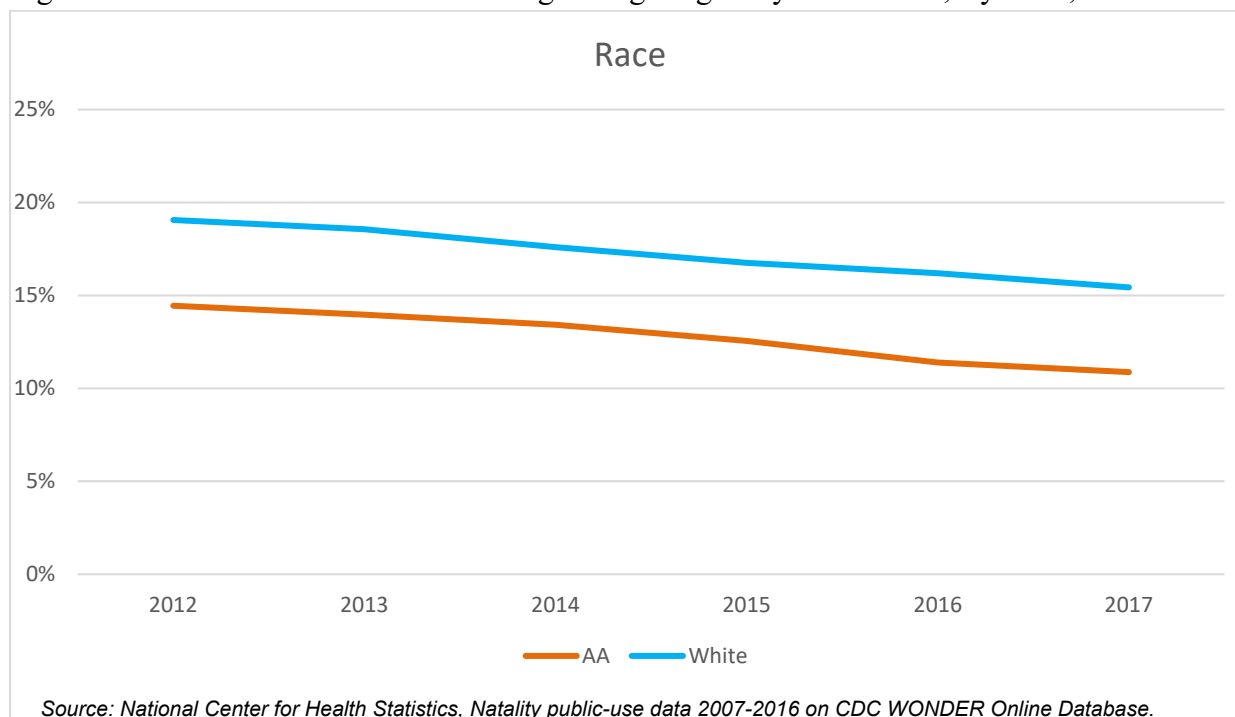


Figure 24: % Births with Mother Smoking during Pregnancy in Missouri, By Race, 2012-2017.



Tobacco Consequences

Mortality Rates

Missouri has been higher than the national average for rate of deaths due to tobacco use (lung cancer, COPD and emphysema, and cardiovascular and ischemic cerebrovascular disease) for the last decade.

When looking at rates by demographics, men and whites are more likely to die due to lung cancer. White are also more likely to die due to COPD and emphysema and cardiovascular and ischemic cerebrovascular disease although there is not a strong difference between the genders.

Figure 25: Rate of Deaths from Lung Cancer per 100,000 Population: U.S. and MO, 1998-2017.

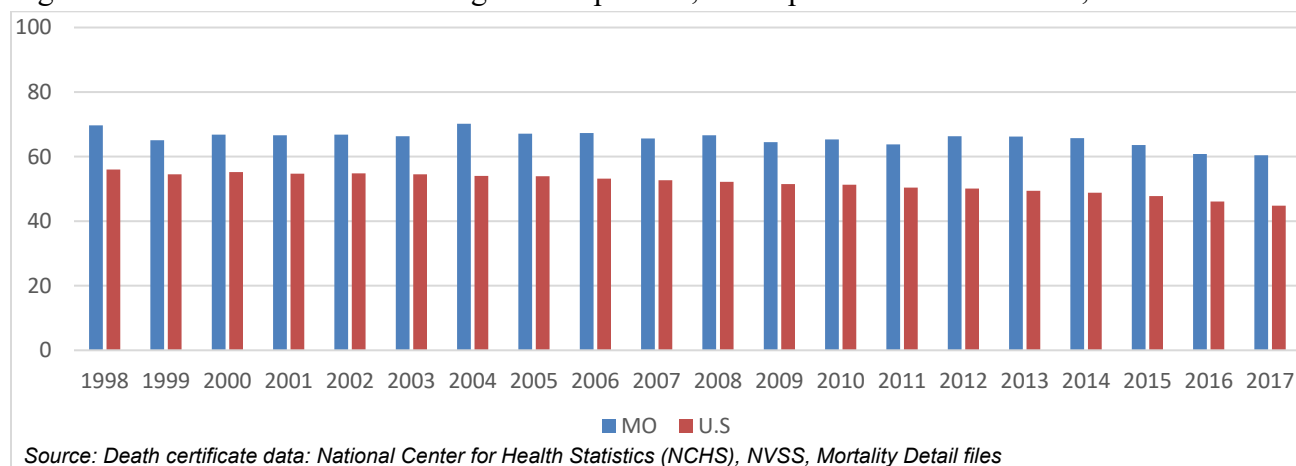


Figure 26: Rate of Deaths from Lung Cancer by Demographics per 100,000 Pop: MO only, 1998-2017.

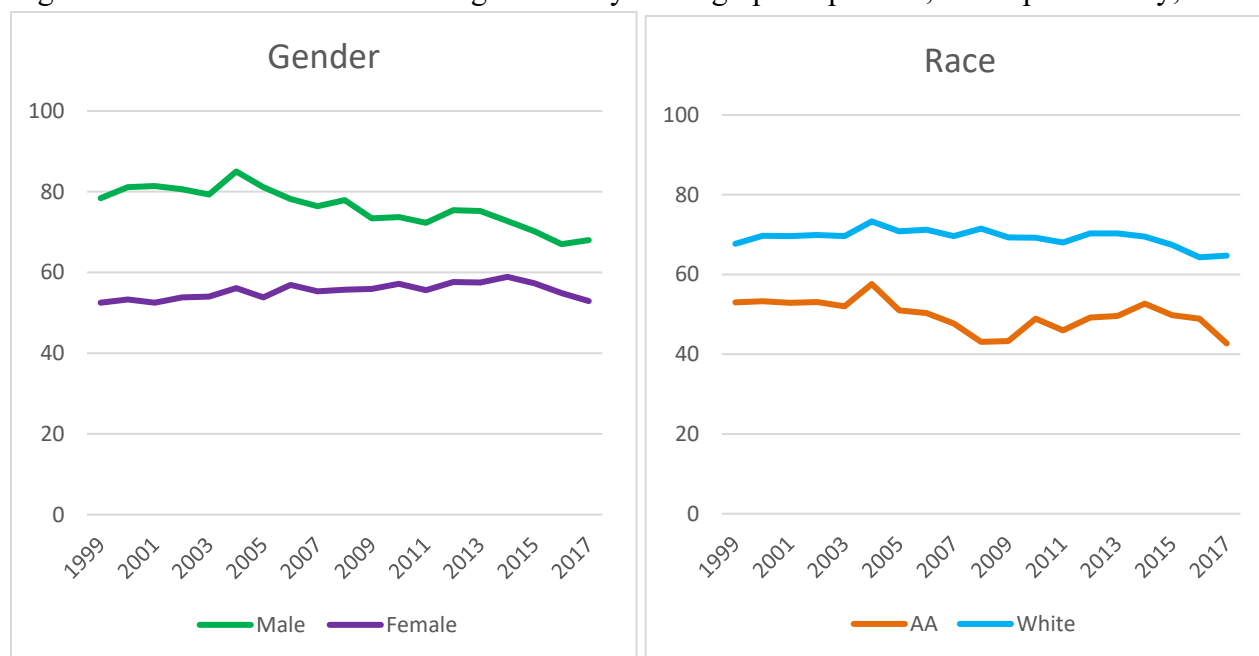


Figure 27: Rate of Deaths from COPD and Emphysema per 100,000 Population: U.S. and MO, 1998-2017.

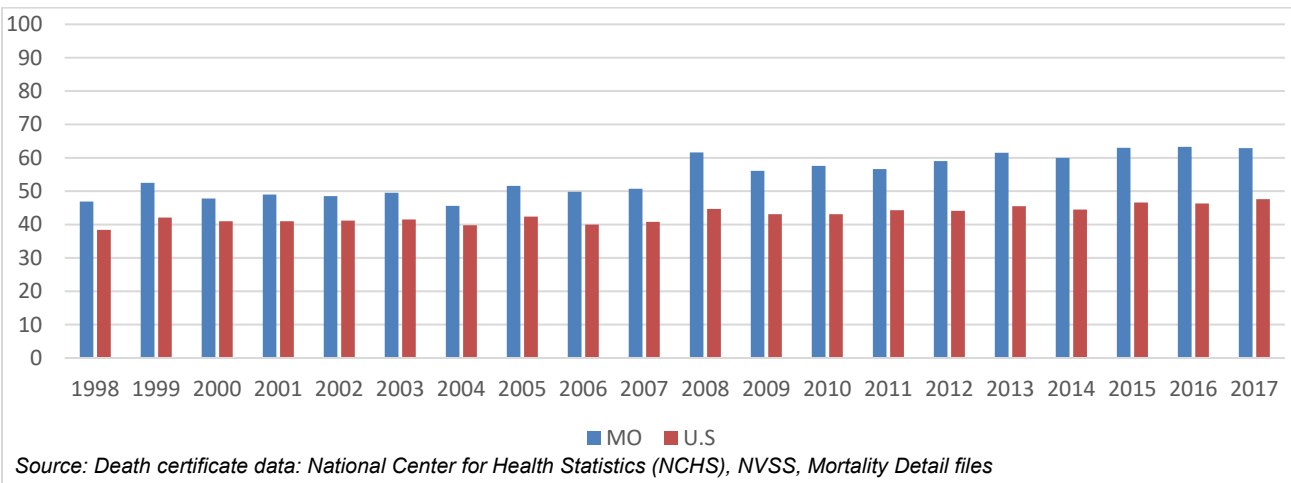
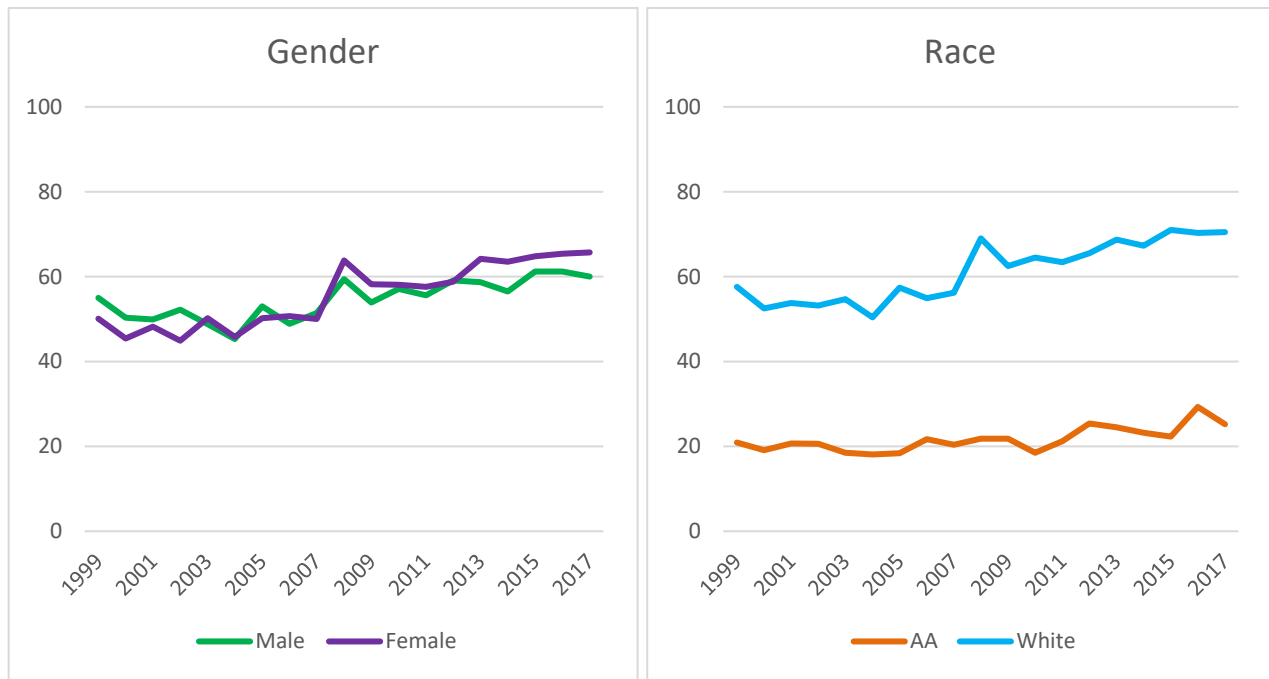


Figure 28: Rate of Deaths from COPD and Emphysema by Demographics per 100,000 Pop: MO only, 1998-2017.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Figure 29: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease per 100,000 Pop: U.S. and MO, 1998-2017. NOTE: Change in Scale.

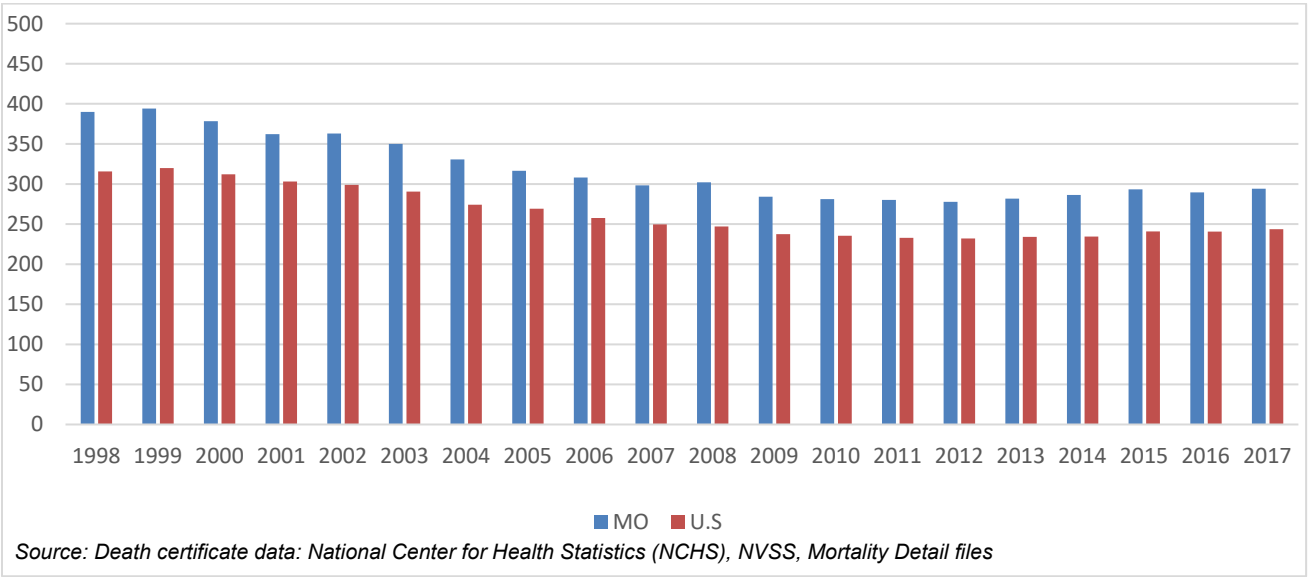
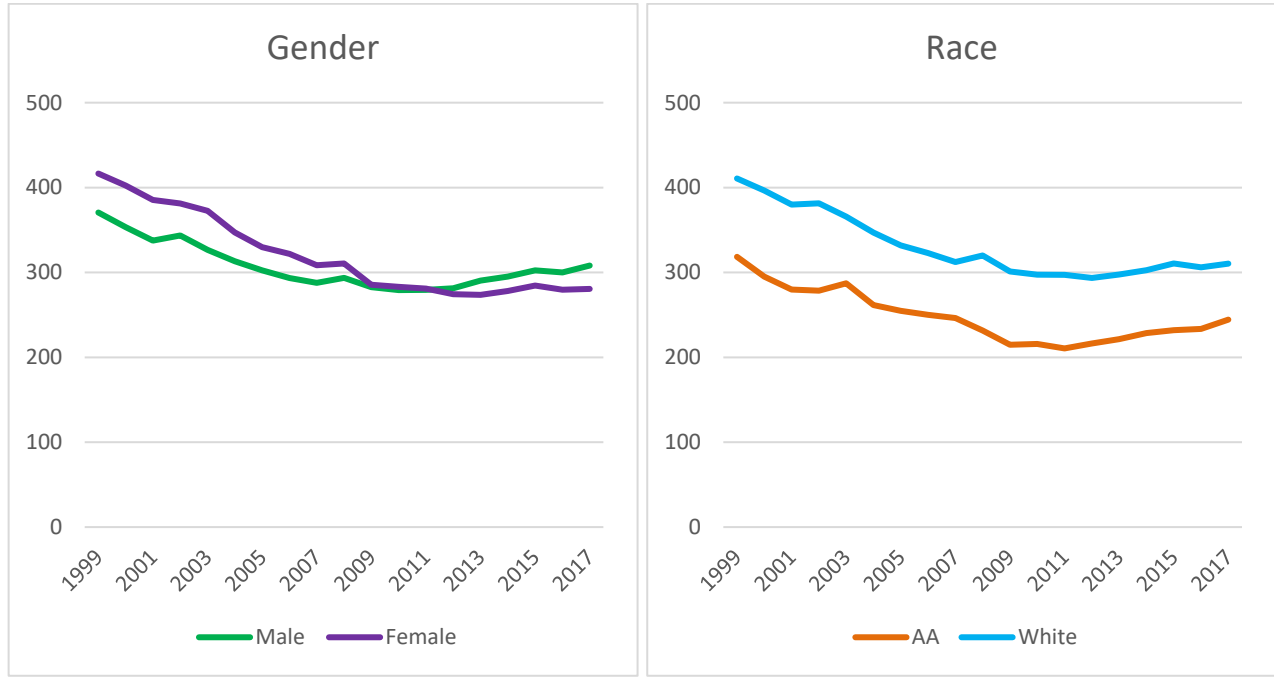


Figure 30: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease by Demographics per 100,000 Pop: MO only, 1998-2017. NOTE: Change in Scale.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Prescription Drugs

Nonmedical Use of Pain Relievers in the Past Year

In 2016-17, 4.1% of all Missourians aged 12 and older reported using pain relievers in a way a doctor did not prescribe them. This number is similar to the national average (4.2%).

Those aged 18-25 years are most likely to have reported non-medical use of pain relievers in the past month.

In 2015, NSDUH updated the survey question to reflect use of a pain reliever “in a way that the doctor did not direct you to use them” rather than “nonmedical use”. Because of this, data prior to 2015 are not comparable. To review data prior to 2015, refer to the 2017 Missouri Epidemiological Profile.

Figure 31: Estimated Past Year Non-Medical Use of Pain Relievers (%): U.S. and Missouri Ages 12 and Older, 2015-2017. NOTE: Change in Scale.

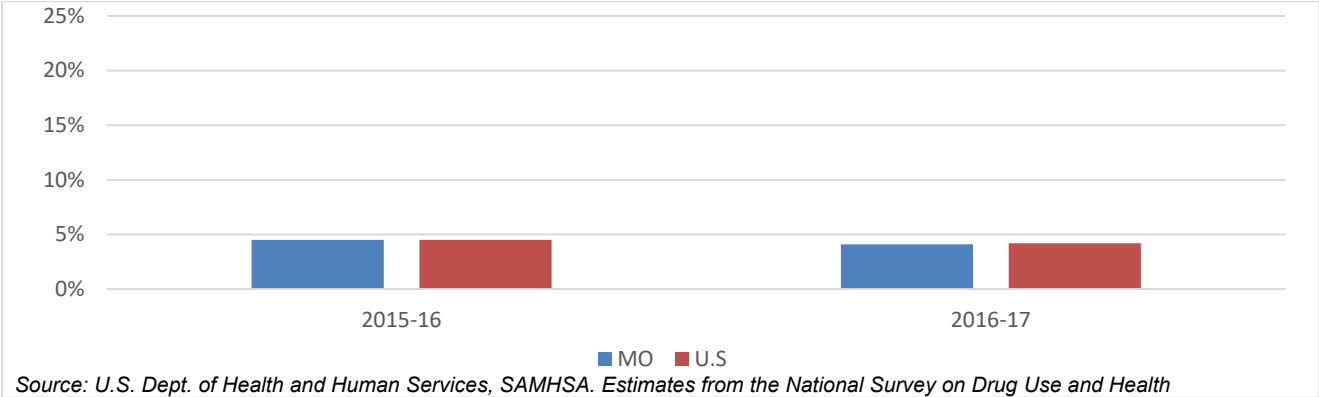
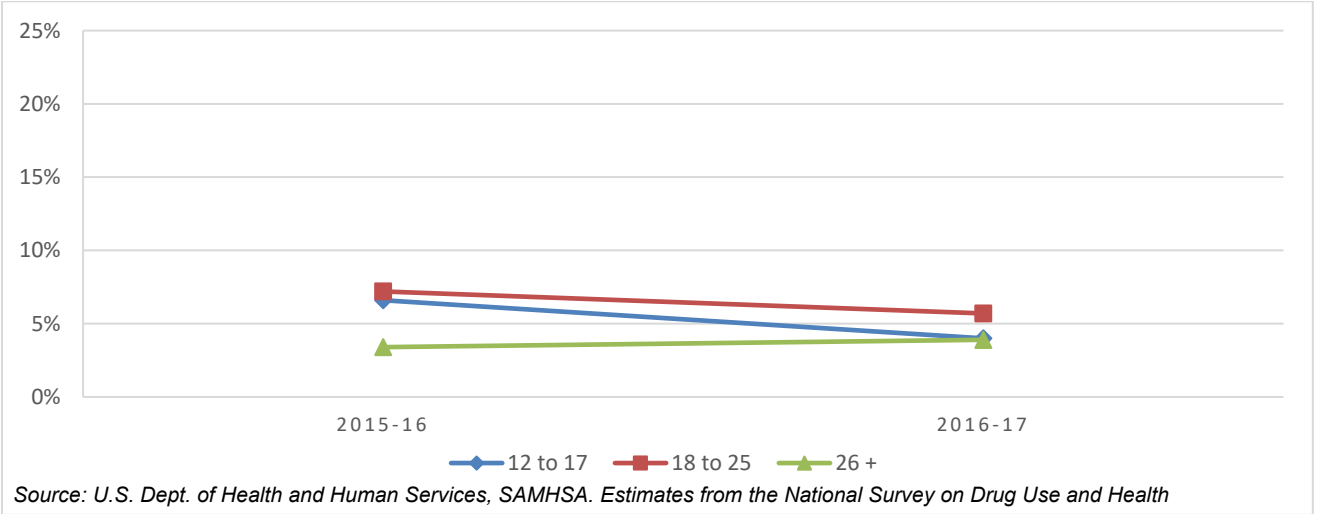


Figure 32: Estimated Past Year Non-Medical Use of Pain Relievers (%) in Missouri, By Age Group, 2015-2017.



Prescription Drug-Related Mortality

Missouri is consistently higher than the national average for rate of deaths due to prescription drugs.

When looking at rates by demographics, men are more likely to die due to prescription drugs. There is a slight difference in prescription drug deaths by race. Whites were more likely to die due to prescription drugs until 2015; in recent year deaths in African-Americans have increased.

Figure 33: Rate of Deaths from Prescription Drug per 100,000 Pop: U.S. and Missouri, 2000-2017.

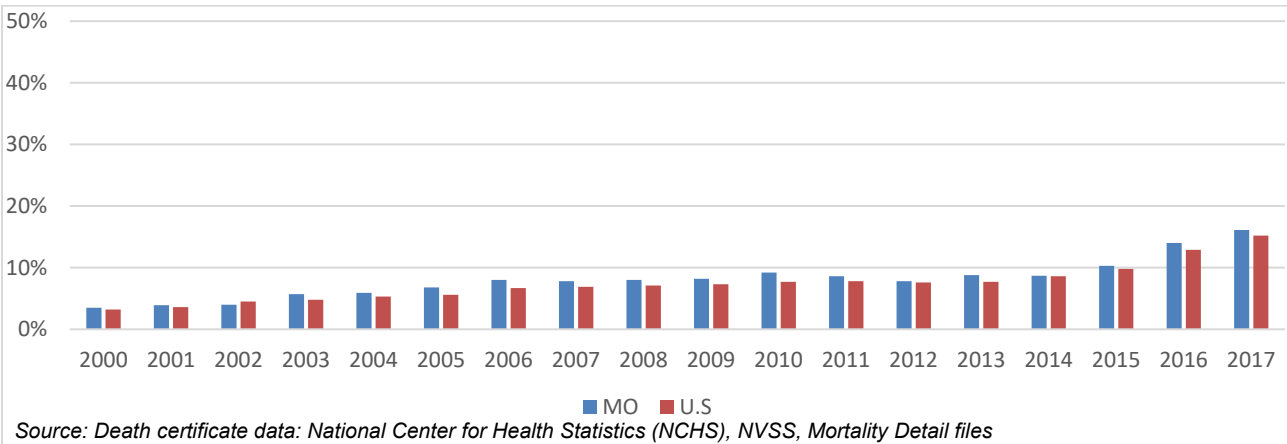
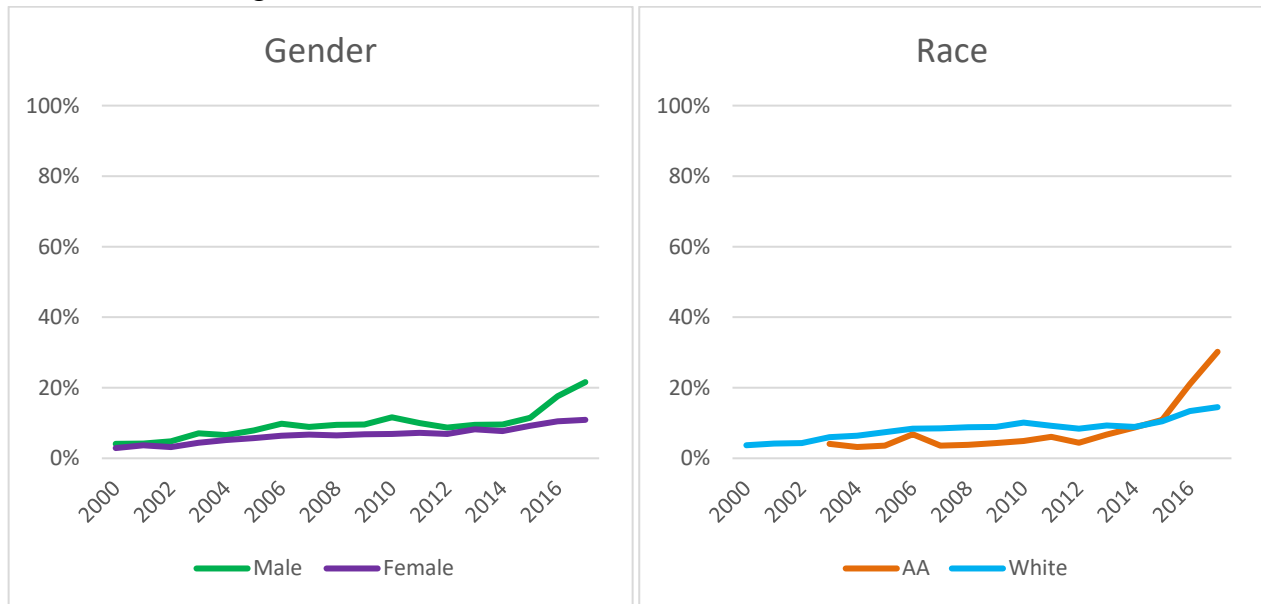


Figure 34: Rate of Deaths from Prescription Drug by Demographics per 100,000 Pop: MO only, 2000-2017. NOTE: Change in Scale.



Source: National Center for Health Statistics. Underlying Cause of Death 2000-2016 on CDC WONDER Online Database

Illicit Drugs

Marijuana

In 2016-17, 8.5% of all Missourians aged 12 and older reported using marijuana in the past month, which has slightly increased over the past few years and is just below the national average (9.2%).

Around five percent (5.3%) of Missourians in the 12-17 age group reported smoking marijuana in the last month. This compares to 18.3% of 18-25 year olds and 7.3% in the 26+ age group.

Those in the 18-25 year old age group are most likely to have used marijuana in the past month. Rates for the 26+ age group have been increasing for the last few years while rates for the 18-25 year age group have decreased.

Current information for Missouri students and illicit drug use can be found in the Missouri Student Survey report (<http://dmh.mo.gov/ada/rpts/survey.html>).

Figure 35: Estimated Past-Month Marijuana Use (%): U.S. and Missouri Ages 12 and Older, 2002-2017.

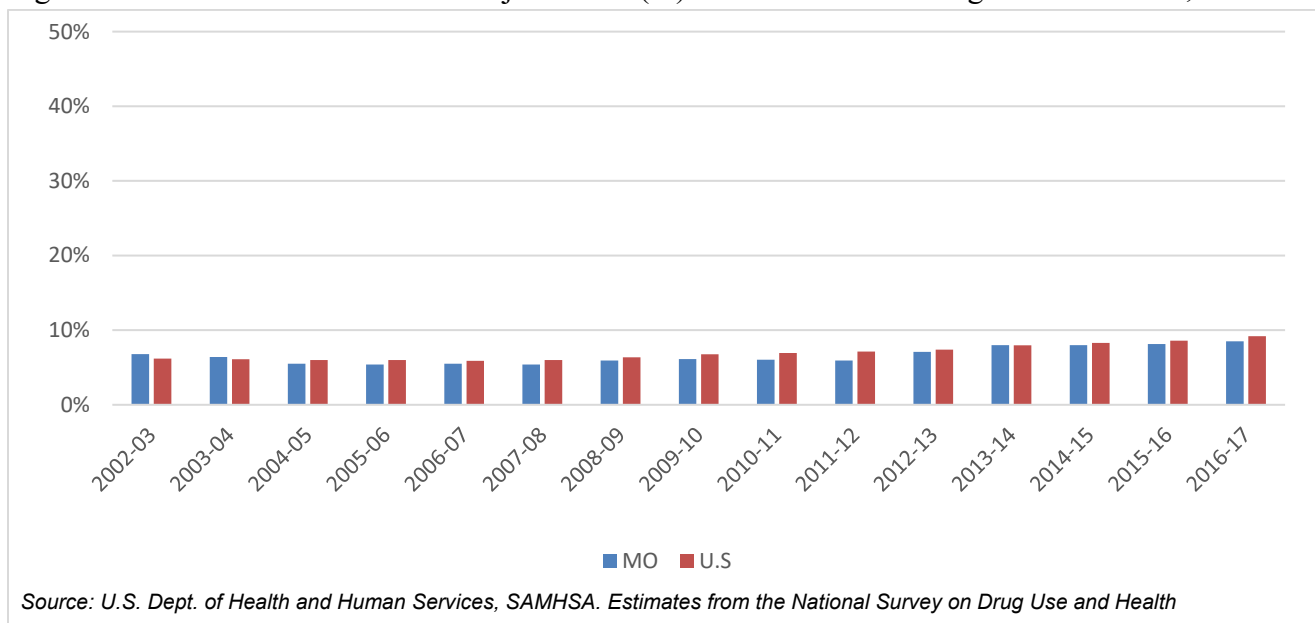
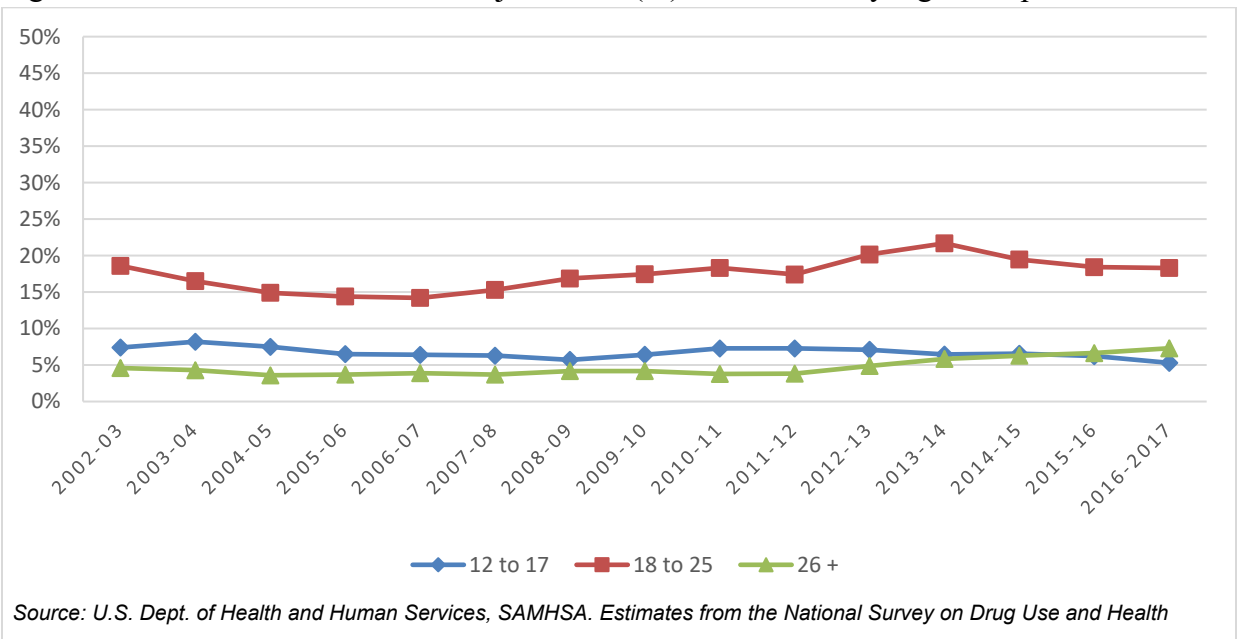


Figure 36: Estimated Past-Month Marijuana Use (%): In Missouri by Age Group, 2002-2017.



Other Illicit Drugs

“Other illicit drugs” is defined as an illegal drug other than marijuana, or an abusable product that can be obtained legally, such as prescription drugs. In 2015, NSDUH made changes to survey questions on hallucinogens, inhalants, methamphetamine, and psychotherapeutic drugs. Therefore, data prior to 2015 are no longer comparable to current data. To review data prior to 2015, refer to the 2017 Missouri Epidemiological Profile.

In 2016-17, 3.2% of all Missourians 12 and older reported using illicit drugs in the previous month. This is slightly lower than the national average (3.4%).

Over four percent (4.5%) of Missourians in the 12-17 age group reported using illicit drugs in the past month, compared to 4.9% of 18-25 year olds and 2.8% in the 26+ age group. Those in the 18-25 year old age group are most likely to have reported using illicit drugs in the past month.

Data on students in 9-12 grades reporting illicit drug use have not been updated since 2009 and so were discontinued for this report. More current information for Missouri students and illicit drug use can be found in the Missouri Student Survey report (<http://dmh.mo.gov/ada/rpts/survey.html>).

Figure 37: Estimated Past-Month Other Illicit Drug Use (%): U.S. and Missouri Ages 12 and Older, 2015-2017. NOTE: Change in Scale.

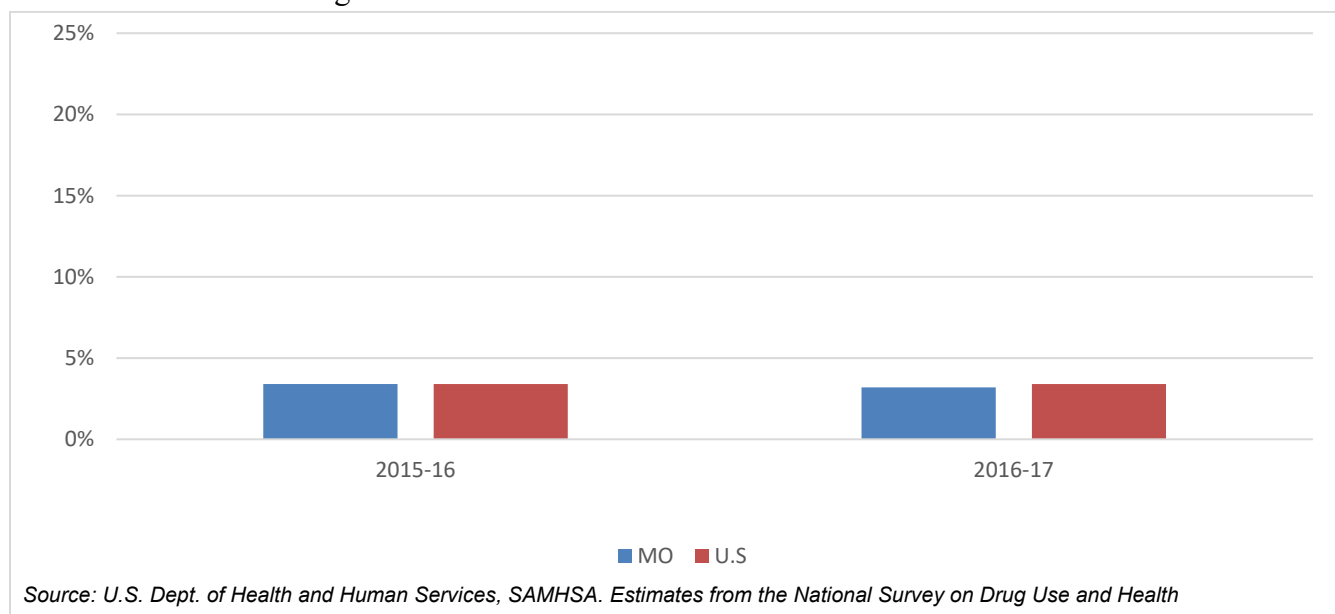
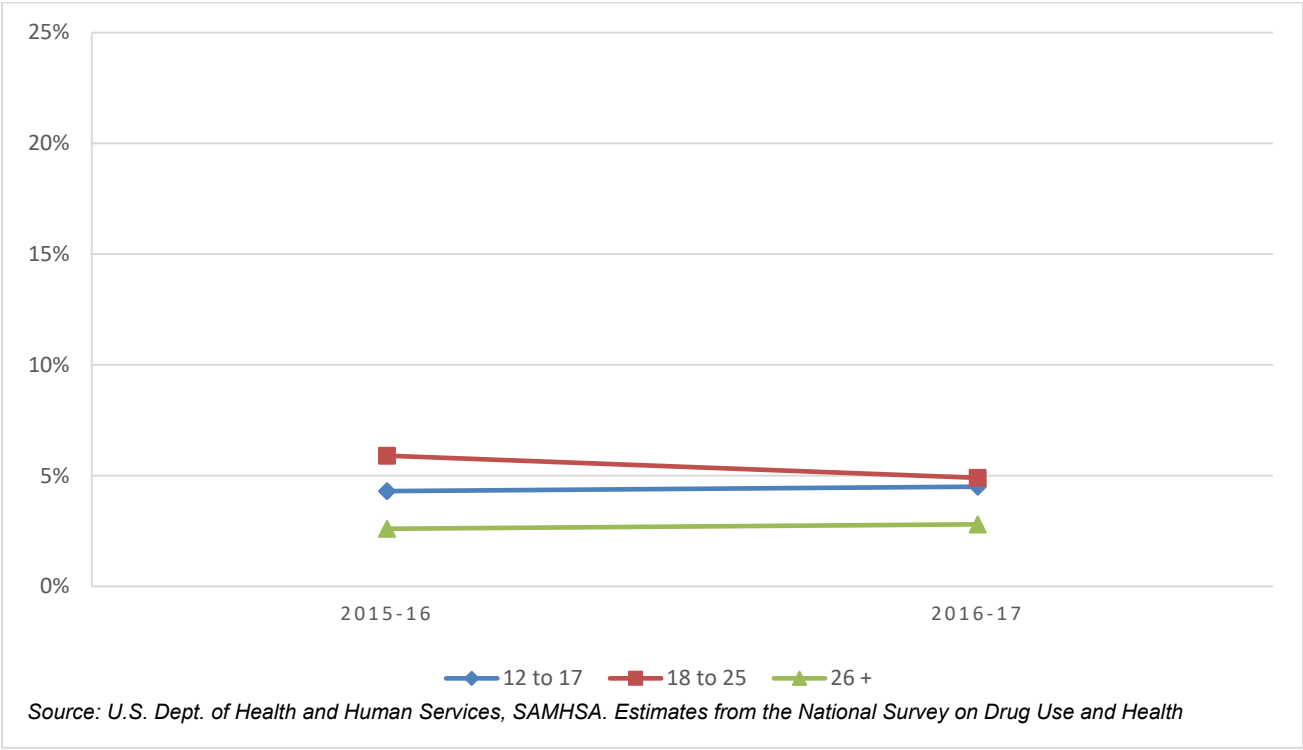


Figure 38: Estimated Past-Month Other Illicit Drug Use (%): In Missouri by Age Group, 2015-2017.



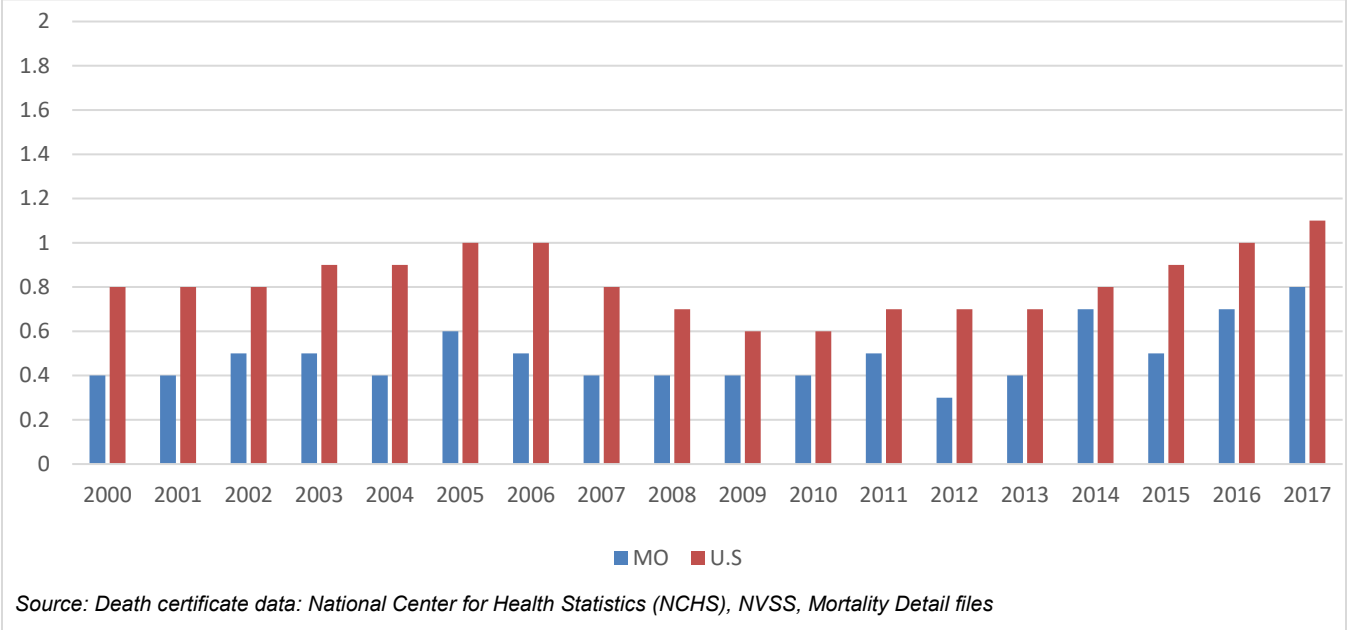
Illicit Drug Consequences

Illicit Drug-Related Mortality

Missouri has been lower than the national average for rate of deaths due to drug related behaviors for the last decade.

Due to small numbers, data for gender or race are unreliable for this variable and not reported.

Figure 39: Rate of Deaths from Drug Related Behavior per 100,000 Pop: U.S. and Missouri, 1998-2017.



Missouri has been higher than the national average for rate of deaths related to drug related overdose / poisonings since 2003. This number has been consistently increasing for both Missouri and the U.S. Data from recent years indicate a significant increase in the rate of overdose deaths due to cocaine and methamphetamine use.

Men are more likely than women to die from drug related overdose/poisonings. Over time, there have been more deaths in the White population compared to the African American population. However, deaths among African Americans has increased over the past several years.

Figure 40: Rate of Deaths from Drug Related Overdose/Poisonings per 100,000 population: U.S. and Missouri, 2000-2017. NOTE: Change in Scale.

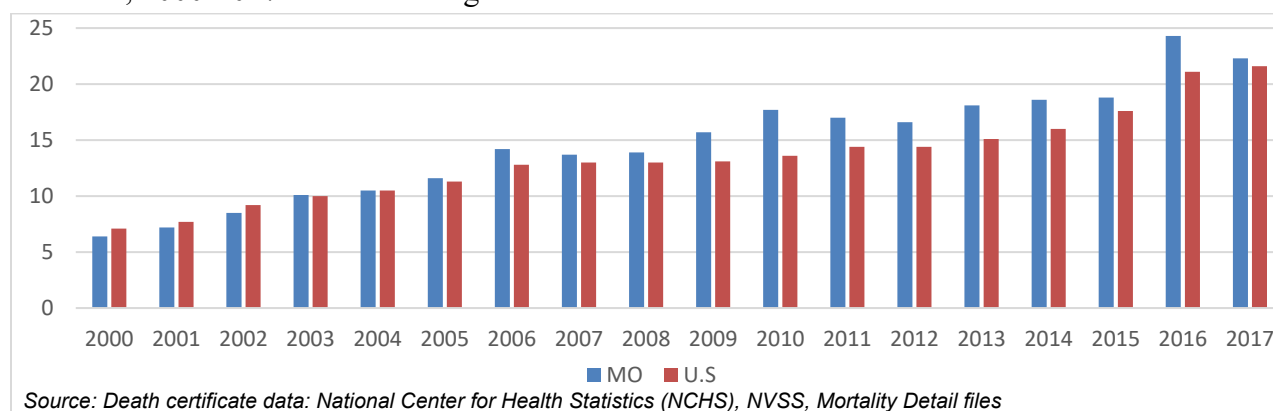
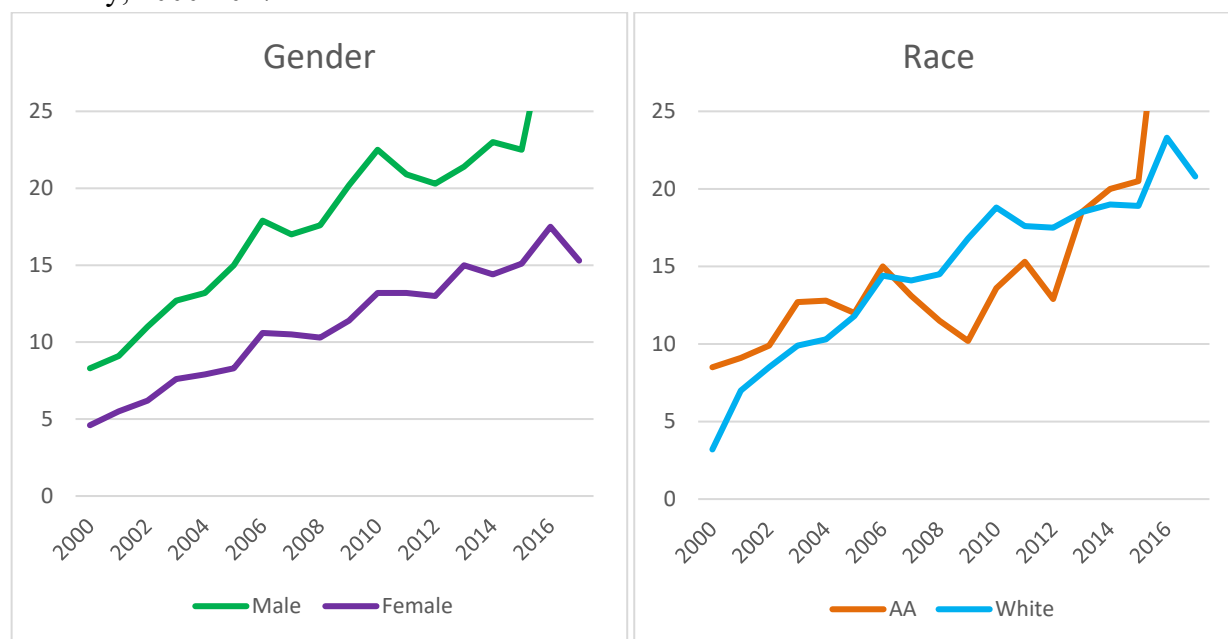


Figure 41: Rate of Deaths from Drug Related Overdose/Poisonings by Demographics per 100,000 Pop: MO only, 2000-2017.

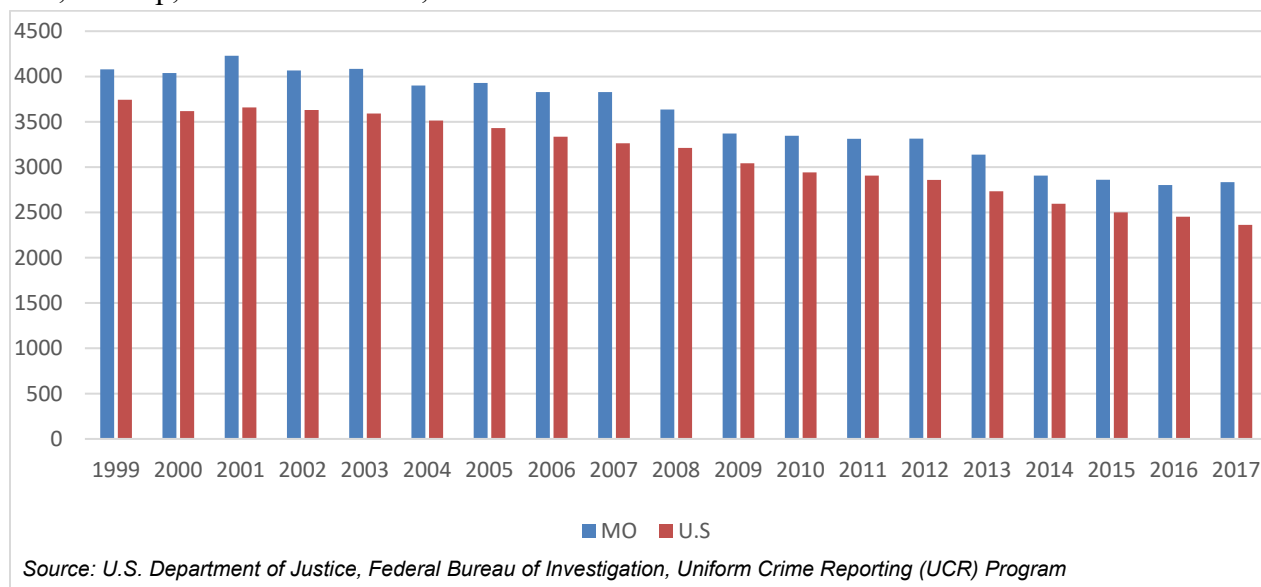


Source: National Center for Health Statistics. Underlying Cause of Death 2000-2016 on CDC WONDER Online Database

Crime

Missouri has been higher than the national average for number of property crimes for the last decade. Rates for both Missouri and the US are trending downward.

Figure 42: Number of Property crimes (larceny, burglary, motor vehicle theft) Reports to Police per 100,000 Pop, U.S. and Missouri, 1999-2017.



Illicit Drug Use Disorder

Illicit Drug Use Disorder is defined as meeting criteria for illicit drug dependence or abuse. In 2015, NSDUH made changes to survey questions on hallucinogens, inhalants, methamphetamine, and psychotherapeutic drugs. Therefore, data prior to 2015 are no longer comparable to current data. To review data prior to 2015, refer to the 2017 Missouri Epidemiological Profile.

Over two percent (2.6%) of Missourians aged 12 and older met criteria for Illicit Drug Use Disorder in 2016-17. This is a number that has remained relatively steady over the past few years and is similar to the national average (2.8%).

In 2016-17, 2.0% of those in the 12-17 age group reported dependence or use of an illicit drug in the past year. This compares to 5.3% of 18-25 year olds and 2.2% in the 26+ age group.

Those in the 18-25 year old age group are most likely to be dependent on or misusing illicit drugs.

Figure 43: % of Persons Aged 12 or Older Reporting Dependence on or Use of Any Illicit Drug in the Past Year: U.S. and Missouri Ages 12 and Older, 2015-2017.

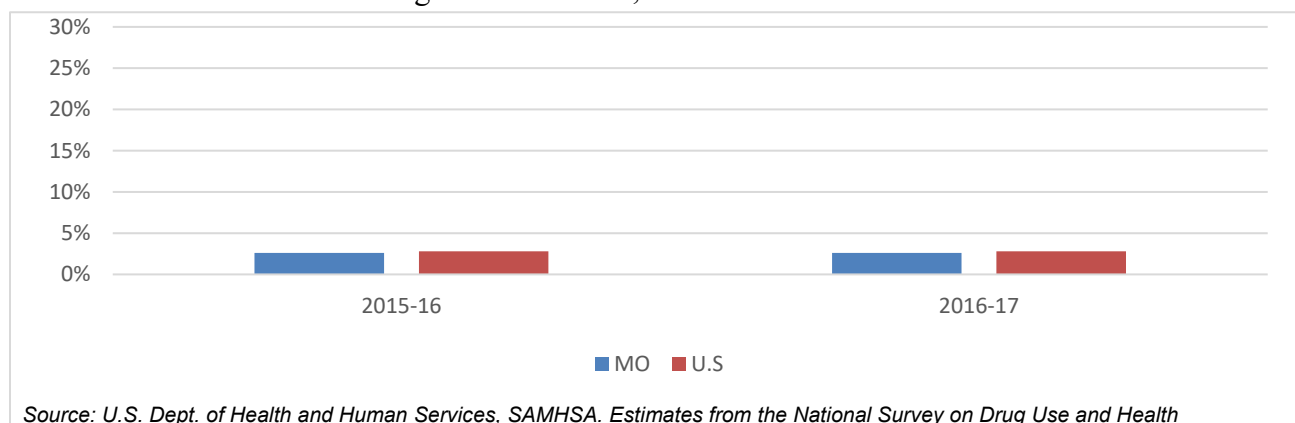
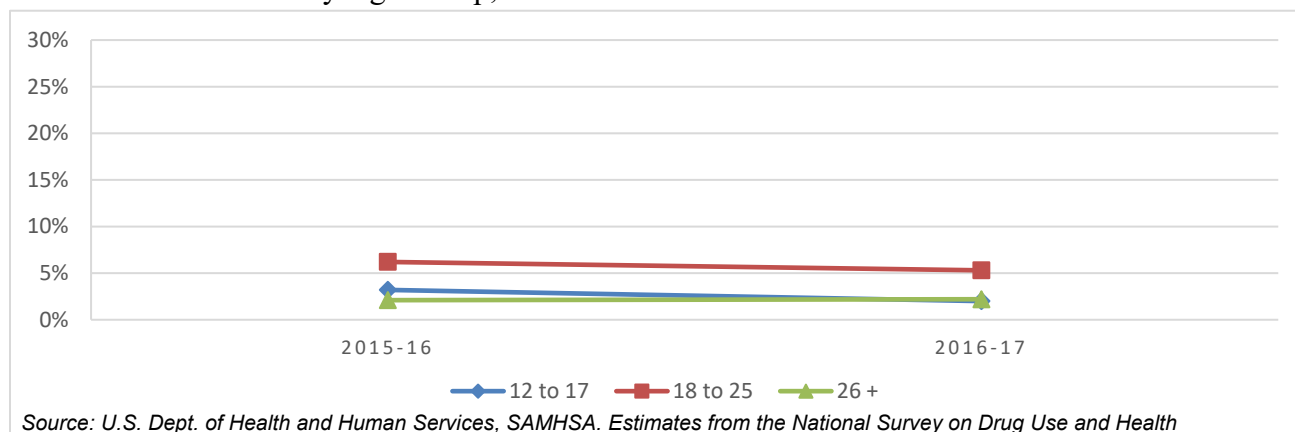


Figure 44: % of Persons Aged 12 or Older Reporting Dependence on or Use of Any Illicit Drug in the Past Year: In Missouri by Age Group, 2015-2017.



Key Risk and Protective Factors (i.e. Intervening Variables)



Youth Risk and Protective Factors

During the Strategic Prevention Framework State Incentive Grant (SPF SIG) and continuing into the Partnerships for Success Grant (PFS), Missouri coalitions were encouraged to use the Hawkins and Catalano Model of Risk and Protective Factors in their strategic planning process. The model provides a variety of risk factors and protective factors that may contribute to youth's drinking behaviors and has been adapted to apply to other problem behaviors (e.g., drugs, violence, etc.). Coalition members used the model to decide what intervening variables might be at the root of the priority issues in their communities. Then they gathered data on the selected intervening variables and used data based decision making to determine which variables would be addressed under the grant. In order to continue building upon what communities learned in these efforts, Missouri will continue to define Risk and Protective Factors according to the Hawkins and Catalano Model.

The only data source currently available in Missouri for these risk and protective factors is the Missouri Student Survey (MSS)³. This section borrows heavily from the 2018 Missouri Student Survey Report³. Data are collected in the Spring of even number years.

Peer Engagement in the Problem Behavior

Most youth surveyed had no friends who used substances.

The large amount of youth who reported having four or more friends engaging in substance use indicates that, if somebody is using, it is probably common among their social group.

Table 2: % of Youth who have Friends that Use Substances, 2018.

	0 friends	1 friend	2 friends	3 friends	4 + friends
Cigarettes	73.7%	10.6%	5.5%	2.7%	7.4%
Alcohol	56.3%	11.2%	7.7%	4.3%	20.6%
Marijuana	65.5%	9.8%	7.1%	4.0%	13.5%
Other Illegal Drugs	89.8%	4.8%	2.4%	0.9%	2.0%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

³ Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report

Perception of Harm

Most youth believed that alcohol and drug use poses a moderate or great risk to them.

E-cigarettes and marijuana are seen as the least risky of the substances.

Table 3: Youths' Perception of Risk of Harm from Using Substances, 2018.

	No Risk at All	Slight Risk	Moderate Risk	Great Risk
Cigarettes (1+ packs per day)	6.8%	8.2%	20.4%	64.7%
Alcohol:				
Any alcohol use	9.5%	30.2%	32.0%	28.3%
One or two drinks nearly every day	10.4%	21.0%	31.8%	36.7%
Five or more drinks once or twice a week	8.5%	14.4%	26.8%	50.3%
E-Cigarettes	14.7%	27.1%	28.1%	30.1%
Marijuana (1-2 times per week)	18.1%	18.9%	18.9%	44.1%
Over the Counter Drugs	7.2%	14.5%	27.4%	51.0%
Prescription Drugs	5.4%	7.7%	19.5%	67.4%
Other Illegal Drugs	5.5 %	3.5%	11.4%	79.6%
Synthetic Drugs	6.2%	6.6%	14.6%	72.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Law Enforcement

Most youth did not believe that the police would catch a substance user in their neighborhood. This is fairly consistent across all drugs.

Table 4: % of Youth who Think The Police would Catch Substance Users in their Neighborhood, 2018.

	No!	no	yes	Yes!
Cigarettes	29.5%	41.0%	21.5%	8.0%
Alcohol	28.2%	40.4%	21.3%	10.0%
Marijuana	23.9%	32.3%	25.3%	18.5%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Availability

Approximately half of all youth surveyed thought that over the counter drugs and alcohol were either “very easy” or “sort of easy” to obtain.

While youth thought that remaining substances were more difficult, over a third still thought marijuana and cigarettes (both types) were at least “sort of easy” to obtain. It should be noted that, at least for older participants, cigarettes are legal for them to purchase in many areas of the state.

Interestingly, less than 1 out of 3 youth thought that prescription drugs would be “very easy” or “sort of easy” to obtain.

Table 5: Youths’ Perception of Substance Availability, 2018.

	Very Easy	Sort of Easy	Sort of Hard	Very Hard
Cigarettes	24.3%	20.1%	17.6%	38.1%
Alcohol	28.0%	20.9%	18.7%	32.3%
Over-the-Counter Drugs	31.7%	18.6%	14.5%	35.2%
E-Cigarettes	30.4%	17.8%	14.8%	37.0%
Marijuana	21.7%	15.2%	13.6%	49.5%
Prescription Drugs	11.2%	14.2%	21.3%	53.2%
Synthetic Drugs	11.1%	11.5%	18.0%	59.3%
Other Illegal Drugs	5.3%	7.6%	16.2%	70.9%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Perception of ‘wrongness’

Most youth thought that it was “very wrong” to use any of the substances.

Youth were most likely to accept alcohol use out of all the substances presented.

Table 6: Youths’ Perception of Wrongfulness of Substance Use, 2018.

		Not wrong at all	A little bit wrong	Wrong	Very wrong
Cigarettes		5.2%	7.7%	17.5%	69.5%
Alcohol:					
	Any type of alcohol	12.4%	19.9%	16.5%	51.2%
	One or two drinks every day	4.6%	9.1%	18.8%	67.4%
	Five or more drinks once or twice a week	4.8%	6.4%	15.7%	73.2%
E-Cigarettes		9.6%	13.4%	18.8%	58.1%
Marijuana:					
	Any use	10.1%	10.7%	12.5%	66.7%
	Once or twice a week	9.2%	8.6%	12.8%	69.4%
Over the Counter Drugs		3.1%	4.0%	13.2%	79.7%
Prescription Drugs		1.9%	3.3%	10.2%	84.6%
Other Illegal Drugs		1.7%	1.4%	6.6%	90.3%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Rebellious attitudes

Most youth did not report rebellious attitudes.

Table 7: Extent of Rebellious Attitudes, 2018.

	Strongly disagree	Disagree	Agree	Strongly Agree
I ignore rules that get in my way.	40.5%	43.2%	13.8%	2.4%
I do the opposite of what people tell me, just to get them mad.	50.2%	37.2%	9.9%	2.6%
I think sometimes it is okay to cheat at school.	46.9%	31.2%	17.2%	4.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Parental attitudes

Most youth thought that their parents would think they were “very wrong” to use any of the substances asked about.

However, again youth saw alcohol as the least “wrong” drug when considering their parents’ perception of wrongfulness. When a dosage was indicated (1-2 drinks nearly every day), youth reported similar “wrongfulness” for alcohol as compared to other drugs.

Table 8: Youths’ Perception of Parental Perception of Wrongfulness of Substance Use, 2018.

	Not wrong at all	A little bit wrong	Wrong	Very wrong
Tobacco	2.5%	3.6%	11.2%	82.7%
Alcohol (dosage not indicated)	5.8%	12.1%	17.0%	65.1%
Alcohol (1-2 drinks nearly every day)	2.6%	3.6%	10.7%	83.1%
Marijuana (dosage not indicated)	3.6%	5.4%	10.1%	80.9%
Marijuana (1-2 times per week)	3.6%	3.4%	8.2%	84.8%
Over the Counter Drugs	2.6%	1.2%	6.6%	89.5%
Prescription Drugs	2.2%	2.2%	8.2%	87.4%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

School bonding

The majority of youth had positive things to say about their school environment.

Youth were least likely to endorse the item asking if the school notifies their parents when they have done something well.

Table 9: Perceptions and Attitudes toward School by Youth, 2018.

	Strongly disagree	Disagree	Agree	Strongly Agree
My teacher(s) notice(s) when I am doing a good job and let me know about it.	6.0%	20.2%	57.6%	16.2%
The school lets my parents know when I have done something well.	19.3%	39.8%	32.7%	8.3%
In my school, rules are enforced fairly.	11.2%	23.2%	50.7%	14.9%
In my school, students of all races and ethnic groups are treated equally.	7.4%	13.3%	42.6%	36.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Adult Attitudes and Perceptions of Drug Use

A community level survey was implemented in 2018 to capture data similar to the Missouri Student Survey with a more randomized sample of adults. Questions were generated by Missouri's Prevention Resource Centers. The survey was completed using the online survey tool, Qualtrics, and advertised to the public through geographically targeted Facebook ads. A total of 3349 adults completed the survey. Parents made up 79.4% of sample size.

Perception of Harm

Most adults believed that binge drinking, smoking, and drug use pose a moderate or great risk to them. Marijuana was considered the least risky of the substances.

Table 10: Adults' Perception of Risk of Harm from Using Substances, 2018.

	No Risk at All	Slight Risk	Moderate Risk	Great Risk
Having 1-2 drinks nearly every day	9.3%	36.9%	36.9%	16.9%
Having 5+ drinks 1-2 times a week	2.8%	16.1%	39.5%	41.6%
Smoking 1+ packs of cigarettes per day	4.4%	8.6%	19.7%	67.2%
Smoking E-cigarettes or using vapes	6.7%	19.4%	34.2%	39.7%
Smoking marijuana 1-2 times per week	19.7%	26.9%	25.5%	27.9%
Using prescription drugs that have not been prescribed to them by a doctor	1.2%	4.7%	17.6%	76.4%

Source: Special run, DMH Adult Survey (2018).

Availability

Three-quarters of adults surveyed thought that marijuana was "very easy" or "sort of easy" to obtain. Over half (55%) felt that prescription drugs not prescribed to them by a doctor are "very easy" or "sort of easy" to obtain. Over 40% of adults felt that other illegal drugs such as cocaine, LSD, methamphetamine, or club drugs would be at least somewhat easy to obtain. Heroin was seen as the most difficult drug to obtain.

Table 11: Adults' Perception of Substance Availability, 2018.

	Very Easy	Sort of Easy	Sort of Hard	Very Hard
Marijuana	44.9%	30.3%	15.0%	9.9%
Prescription drugs that were not prescribed to you by a doctor	26.7%	28.6%	24.7%	20.0%
Heroin	14.2%	17.6%	23.5%	44.6%
Other illegal drugs including cocaine, LSD, methamphetamine, or club drugs	22.2%	21.6%	22.2%	34.0%

Source: Special run, DMH Adult Survey (2018).

Attitudes toward Marijuana Use

Over thirty-five percent (37.5%) of adults surveyed felt that marijuana use was fine for those who wish to use it. About half of adults (47%) supported use of marijuana for medical purposes, but did not support recreational use. Fifteen percent (15%) did not support marijuana use at all.

Table 12: Adults' attitudes toward marijuana use, 2018.

	% of Adults
Using marijuana for medical purposes is OK but it should not be used recreationally	47.3%
Using marijuana is fine for people who wish to do so	37.5%
Using marijuana is never a good thing	15.3%

Source: Special run, DMH Adult Survey (2018).

Of those adults who supported recreational marijuana use, about 56% felt that using marijuana was only OK for those over 21 years old. Another 22% felt occasional use was fine for those under age 21, as long as it did not interfere with daily activities.

Table 13: Adults' attitudes toward recreational marijuana use, 2018.

	% of Adults
Using marijuana is only OK for people 21 or over	56.3%
Using marijuana occasionally is OK for people under age 21, as long as it does NOT interfere with their daily activities	21.9%
Using marijuana at least once a week is fine for people under the age of 21 who wish to do so	4.4%
Using marijuana occasionally is fine for people under age 21, even if sometimes it DOES interfere with their daily activities	0.7%
Other	16.7%

Source: Special run, DMH Adult Survey (2018).

Of adults who supported medical marijuana use, over half (55%) felt that those under 21 should be required to have parental permission, while 25% felt that use for medical purposes was fine regardless of age.

Table 14: Adults' attitudes toward medical marijuana use, 2018.

	% of Adults
Using marijuana for medical purposes is OK but those under 21 should be required to have parental permission	55.3%
Using marijuana for medical purposes is OK, regardless of age	24.6%
Using marijuana for medical purposes is OK, for those who are at least age 21	13.2%
Other	6.9%

Source: Special run, DMH Adult Survey (2018).

Key Mental Health Indicators



National Comparison

Rates for having at least one major depressive episode are typically higher in Missouri than nationally.

Missourians age 12 to 17 were most likely to report having a major depressive episode in the past year. However, the wide range of the 26+ age group may be obscuring other peaks that occur later in life.

Figure 45: % of Adults Aged 18 and more Having at Least One Major Depressive Episode in the Previous Year: U.S. and Missouri, 2004-2017.

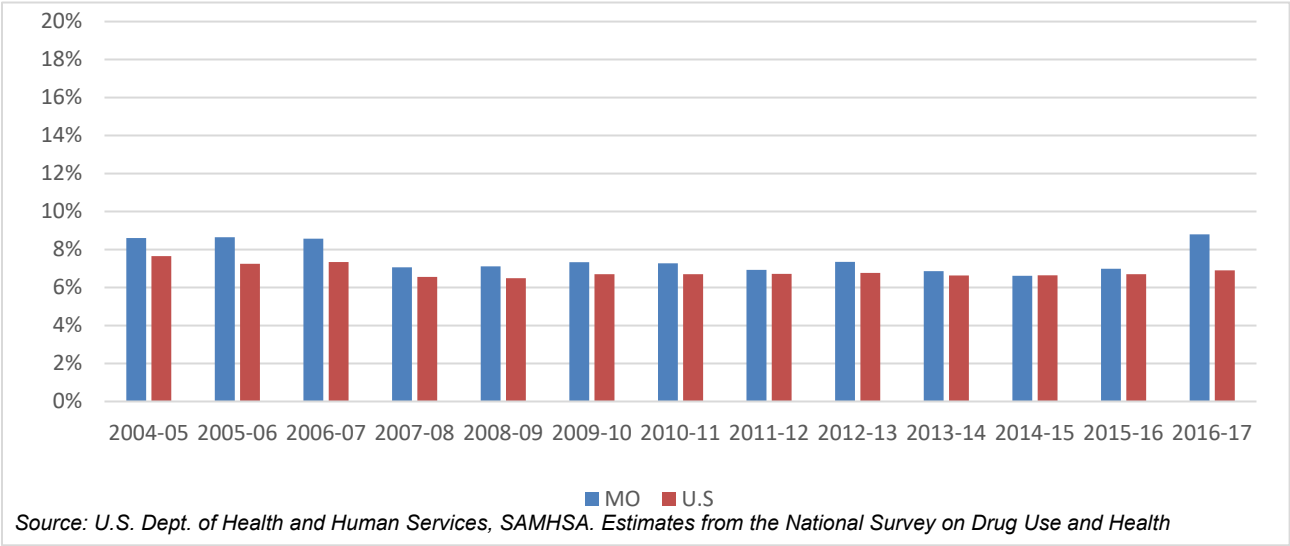
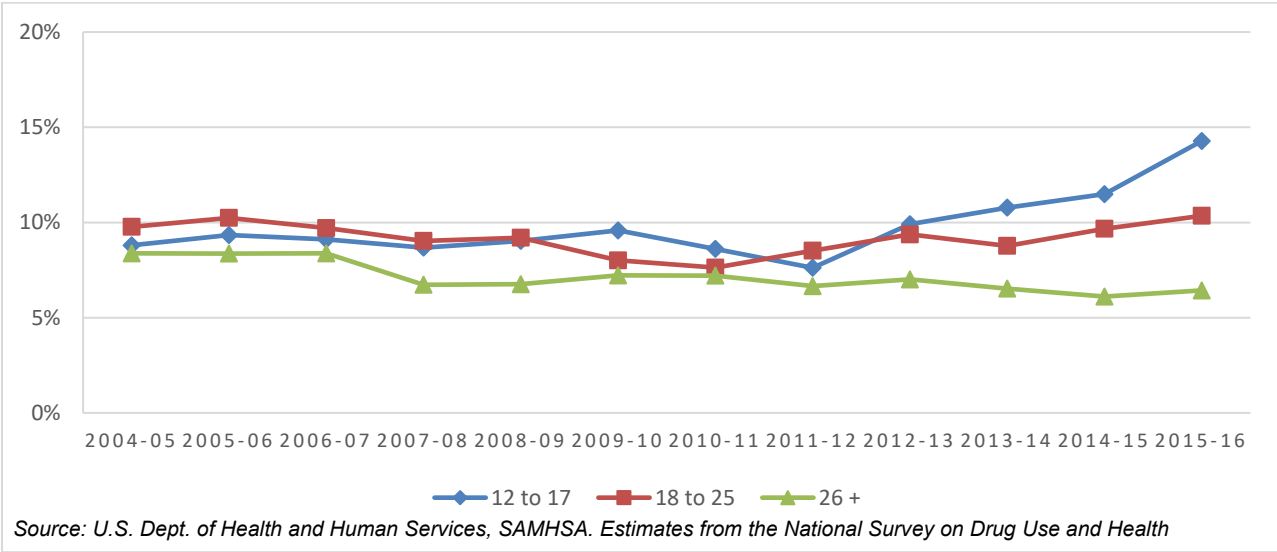


Figure 46: % of Missourians Having at Least One Major Depressive Episode in the Previous Year: by Age Group, 2004-2016.



Missouri Youth

According to the Missouri Student Survey⁴:

- 24.4% said they were sad in the last month “often” or “always”
- 13.2% said they felt hopeless about their future “often” or “always”
- 21.8% said they felt like not eating or eating more than usual while 33.4% slept more or less than usual “often” or “always”
- 14.1% of youth surveyed reported that they considered suicide in the last year
- 10.9% made a plan to attempt suicide

Table 15: Number of Suicide Attempts in the Past Year (12 months), 2018.

	0 times	1 time	2 or 3 times	4 or 5 times	6 or more times
How many times did you actually attempt suicide?	93.8%	3.5%	1.7%	0.4%	0.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Self-harm is defined as attempting to harm oneself on purpose in a deliberative, but not suicidal, way. While the majority of youth did not report any attempt of self-harm in their lifetime, 18.0% reported one or more incidents. The most common method of self-harm was “cut, scratched or hit myself on purpose”.

Table 16: Students Reporting Lifetime Types of Self-Harm, 2018.

	Yes
Cut, scratched or hit myself on purpose to hurt myself	14.1%
Pulled my hair or eyelashes	4.4%
Swallowed more medicine than a doctor told me to take to hurt myself	2.9%
Burned myself	3.2%
Used drugs or alcohol to hurt myself	2.1%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

⁴ Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report

Treatment Data

Of the known diagnoses, Division of Behavioral Health: Psychiatric Services treats mood (affective) disorders most commonly followed by anxiety disorders and psychotic disorders.

Table 10: Diagnoses of Clients Served by Psychiatric Services, 2008-2017.

Diagnosis Category	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Adjustment Disorder	2,674	2,826	2,987	2,870	2,973	3,043	3,069	3,336
Anxiety Disorder	15,459	17,381	19,960	22,842	24,141	26,854	27,803	29,739
Dementia	284	199	209	132	152	567	710	581
Developmental Disorder	827	884	959	1,032	1,070	1,112	1,115	852
Impulse Control Disorder	8,889	9,976	11,333	11,504	11,707	12,491	13,020	13,415
Mood Disorder	35,387	38,273	42,599	45,193	45,731	47,484	47,021	47,536
Personality Disorder	7,079	6,758	6,892	4,694	5,016	5,161	5,269	5,313
Psychotic Disorder	13,021	13,602	14,509	14,602	14,635	15,154	15,222	15,133
Sexual Disorder	176	160	162	276	280	313	266	372
Other Diagnosis	4,599	4,500	4,764	4,462	4,738	5,217	7,347	8,167
Diagnosis Unknown	16,016	8,161	9,681	8,005	6,961	6,277	7,224	6,483
Total Numbers Served	73,731	70,287	78,254	77,539	75,906	77,165	78,094	78,740

Source: Division of Comprehensive Psychiatric Services -- Clinical Data.

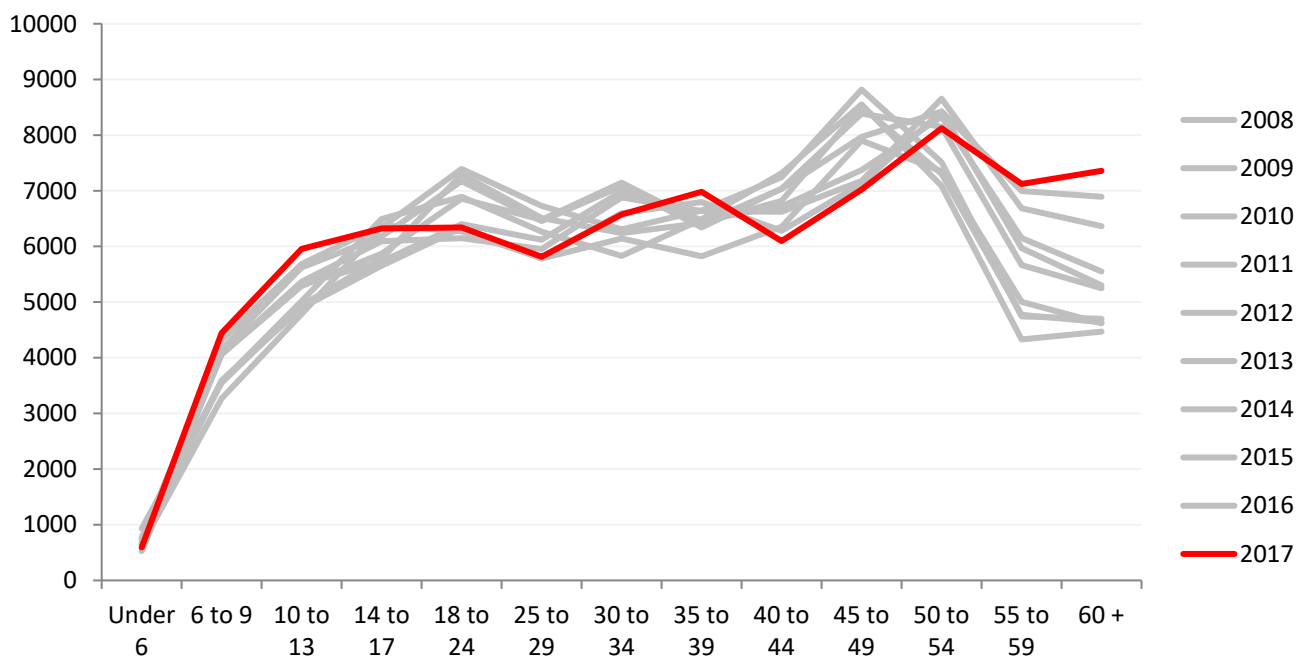
NOTE: The total number of diagnoses is larger than the number served because some individuals had more than one type of disorder.

Psychiatric Services serves approximately equal number of males and females. The majority of clients are White, followed by African American. This distribution is similar to that of the state's population.⁵ Most clients are referred by themselves, family or a friend.⁵

As Missourians age out of childhood, the numbers served by Comprehensive Psychiatric Services (CPS) increase. This peaks for the first time at the 35-39 age group and most dramatically in the early 50s.

Missourians in their mid to late 40s are typically most commonly served by CPS, although in 2013 this shifts into the early 50s.

Figure 47: Number of Clients Served by Comprehensive Psychiatric Services, by Age Group, 2008-2017.

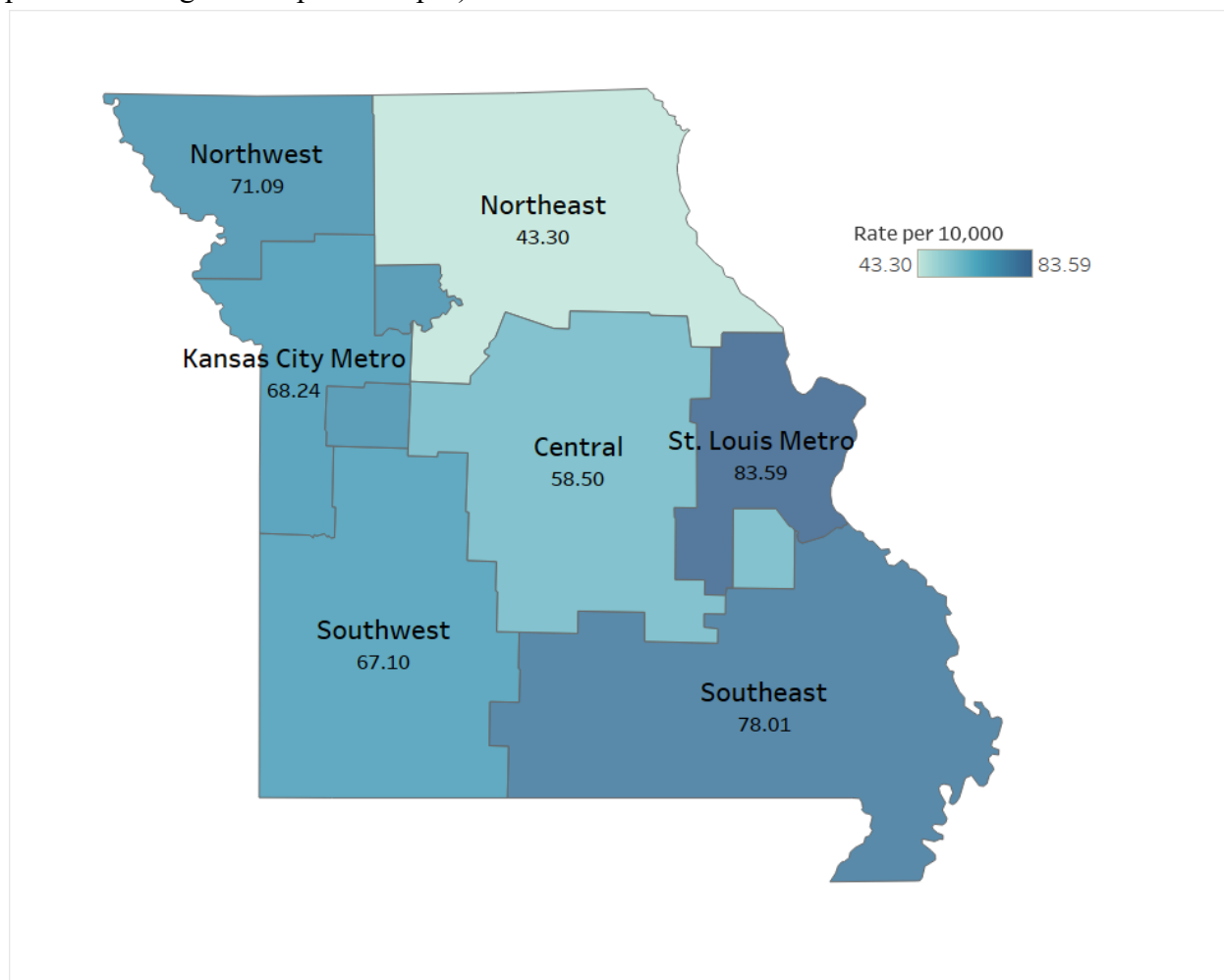


Source: Division of Comprehensive Psychiatric Services -- Clinical Data.

⁵ 2014 Status Report, <http://dmh.mo.gov/docs/ada/rpts/status2014/missouri.pdf>

Hospital admissions for affective disorders showed highest rates in the St. Louis Metro area and lowest rates in the northeast and central parts of the state.

Figure 48: Inpatient Hospitalizations for Affective Disorders Rates per 10,000: Residents of Missouri, Aggregate data 2015. NOTE: Regions are based on BRFSS Regions (<http://health.mo.gov/data/pdf/brfss.pdf>).



Source: Division of Health and Senior Services, MICA database

Mortality Rates of Death due to Suicide

According to NSDUH, Missouri is slightly lower than the national average for having serious thoughts about suicide in the last year. In 2015-16, 3.47% of Missourians had serious thoughts about suicide, compared to 4.04% nationwide. More recent data are not available at this time.

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade. Men and Whites are much more likely to die due to suicide.

Figure 49: Rate of Death due to Suicide per 100,000 Pop: U.S. and Missouri, 1998-2017.

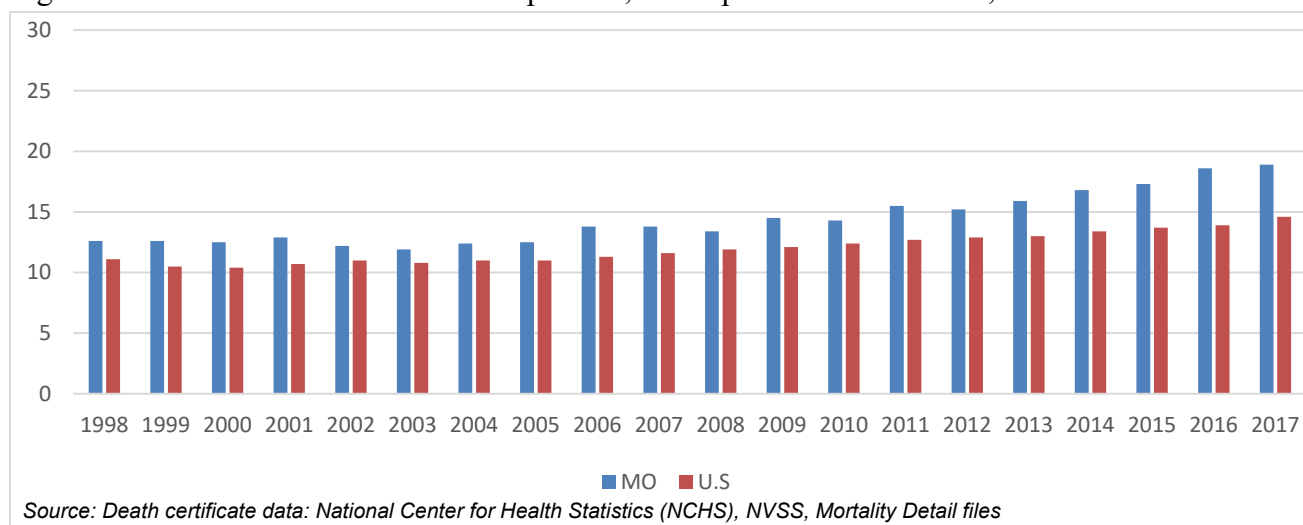
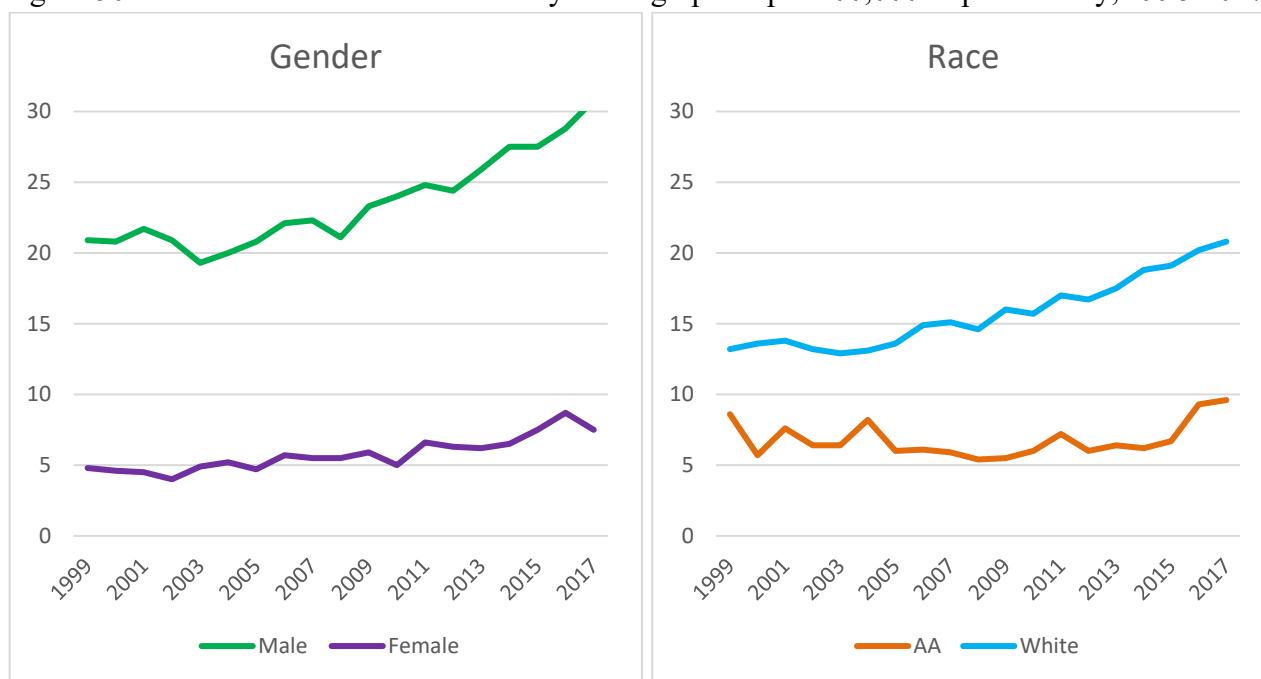


Figure 50: Rate of Deaths due to Suicide by Demographics per 100,000 Pop: MO only, 1998-2017.



High Risk Subpopulations



LGBTQ

Data on the LGBTQ population comes from the 2018 Missouri Student Survey (MSS) (N=120,063). Questions about sexual orientation and gender identity are part of an optional module of the MSS. Schools register prior to the survey administration and schools may opt out of participating in the optional modules. Therefore, the data is not necessarily representative of Missouri. The sample consists of primarily high school students (69%) and 31% were middle school students (31%). Approximately 10.7% (N=1445) of the sample identify as lesbian, gay, or bisexual, and 1.6% (N=220) of the sample identified as transgender.

Most (45.1%) of the LGBTQ sample was from the Eastern Region, 24.3% from the Southwest region, 14.4% from the Southeast Region, 10.8% from the Central Region, and 5.4% from the Northwest region.

Table 18: % of LGBTQ Sample, By Region, 2018.

Region	% of LGBTQ Sample
Central	10.8%
Northwest	5.4%
Southwest	24.3%
Southeast	14.4%
Eastern	45.1%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Substance Use Indicators

LGBTQ students consistently reported higher rates of substance use over the past 30 days than their non-LGBTQ peers. Both groups used alcohol, e-cigarettes, and marijuana most commonly. Twenty one percent (21%) of LGBTQ students used alcohol compared to 15% of heterosexual students, and 19% used alcohol compared to 15% of heterosexual students. Marijuana use among LGBTQ youth was over twice that of heterosexual students (16% and 7%, respectively).

Table 19: Past 30 Day Substance Use, by Sexual Orientation, 2018.

	% LGBTQ	% Heterosexual
Alcohol	21.0%	15.1%
E-Cigarettes	18.8%	14.7%
Marijuana	15.6%	7.1%
Prescription Drugs	14.6%	8.2%
Cigarettes	13.2%	7.9%
Hookah	3.7%	1.8%
Over-the-Counter Drugs	3.3%	1.9%
Inhalants	2.5%	1.0%
Synthetic Drugs	0.4%	0.4%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Mental Health Indicators

Students who identified as LGBTQ are much more likely than students identifying as heterosexual to report having suicidal thoughts and attempting suicide. The rate of LGBTQ suicide attempts (20.3%) was nearly five times the rate in heterosexual students (4.4%)

Table 20: Suicidality, by Sexual Orientation, 2018.

	% LGBTQ	% Heterosexual
Considered suicide	43.8%	12.2%
Made a plan to attempt suicide	30.3%	8.7%
Attempted suicide	20.3%	4.4%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Similarly, many more LGBTQ students reported experiencing symptoms of depression than heterosexual students. Over half of LGBTQ students reported feeling very sad (53%), feeling grouchy or irritable (56%), and experiencing changes in sleep patterns (53%).

Table 21: Symptoms of Depression in the Past Month, by Sexual Orientation, 2018.

	% LGBTQ	% Heterosexual
Felt very sad	52.7%	22.9%
Felt grouchy or irritable	55.6%	32.8%
Felt hopeless about the future	36.5%	13.5%
Felt like not eating or eating more than usual	44.5%	19.9%
Slept a lot more or a lot less than usual	53.4%	30.2%
Had difficulty concentrating on school work	49.3%	28.0%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Bullying and Violence

LGBTQ youth experienced bullying at higher rates than heterosexual students. Seventy percent (70%) of LGBTQ youth had been made fun of, compared to 57% of heterosexual students. Also, 56% of LGBTQ students had rumors or lies spread about them at school compared to 45% of heterosexual students. LGBTQ youth were also more likely to experience physical and online bullying.

Table 22: Bullying in the Past 3 Months, by Sexual Orientation 2018.

	% LGBTQ	% Heterosexual
Made fun of you	69.8%	57.1%
Spread mean rumors or lies about you at school	56.1%	45.3%
Posted something online or sent a text that embarrassed or hurt you	34.0%	24.5%
Hit, shoved or pushed you and was not just fooling around	27.3%	18.9%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

LGBTQ students experienced violence at higher rates. Twenty percent (20%) reported being in a physical fight within the past year and 11% had been threatened or injured with a weapon on school property.

Table 23: Experiencing Violence in the Last Year, by Sexual Orientation, 2018.

	% LGBTQ	% Heterosexual
In a physical fight	20.2%	16.6%
In a physical fight in which you were injured and had to be treated by a doctor or nurse	3.2%	2.0%
Threatened or injured with a weapon such as a gun, knife, or club on school property	11.1%	7.0%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report.

Military Personnel

Data on military personnel are available from NSDUH. While there is a wealth of data regarding tobacco use among military personnel, data on drugs and mental illness are more limited. Where possible, Missouri military personnel are compared to both military personnel nationally and Missouri civilians. Unless otherwise indicated, numbers in this section are representative of both active and inactive military personnel, including veterans.

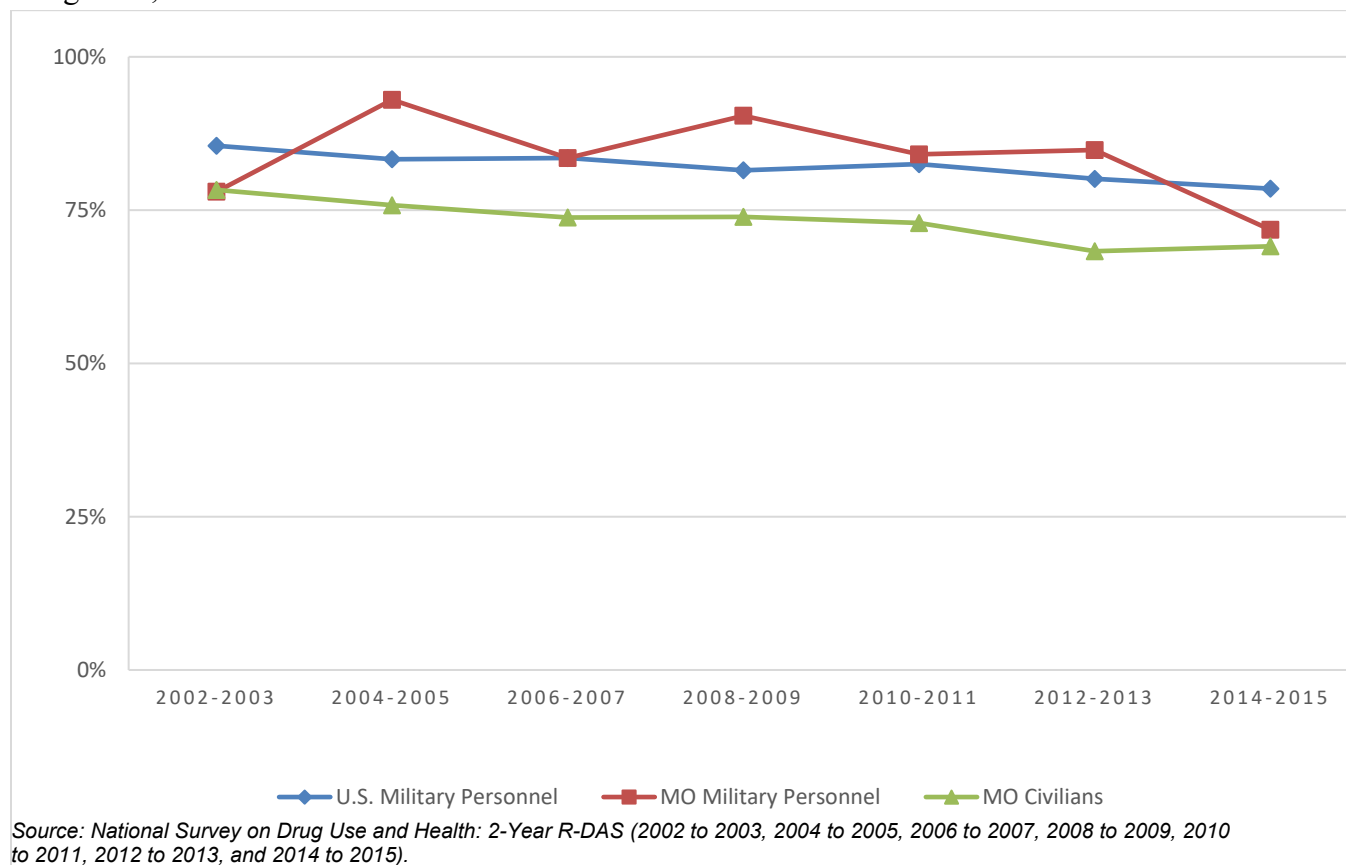
Note that NSDUH data has replaced BRFSS data, as it is publically available. Data after 2015 are not available at this time.

Tobacco Use

The percent of Missouri military personnel who have ever smoked a cigarette is slightly lower than the average of U.S. military personnel.

In Missouri, the percent of military personnel and civilians who have ever smoked a cigarette has declined slightly.

Figure 51: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked a Cigarette, 2002-2015.

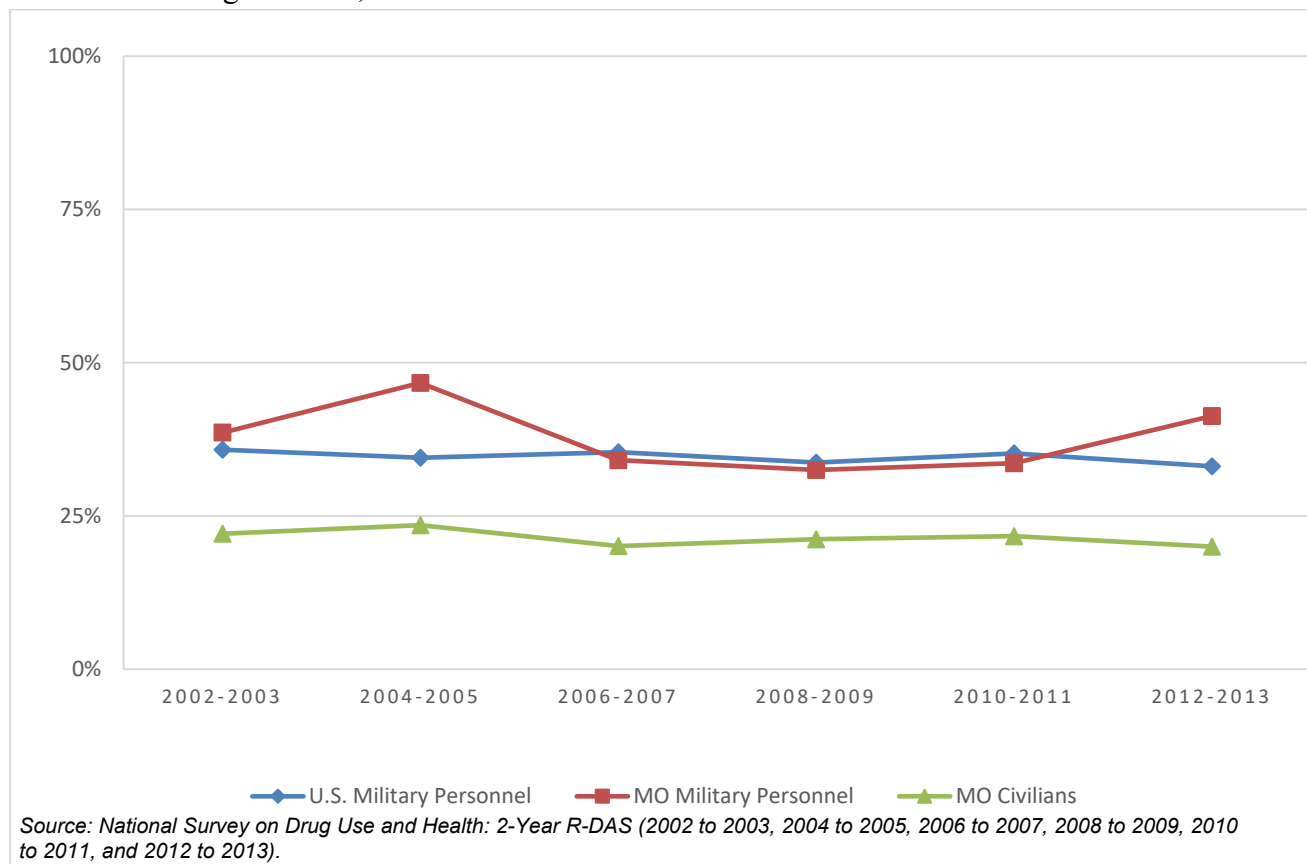


In 2015, the NSDUH replaced questions about snuff and chewing tobacco use with questions about smokeless tobacco in general. Smokeless tobacco includes snuff, dip, chewing tobacco or "snus." Therefore, numbers about smokeless tobacco use are not necessarily comparable to previous years.

The percent of individuals in every category who have ever used snuff has remained relatively stable since 2002-2003.

Military personnel in general use smokeless tobacco at a higher rate than citizens. In 2015-2016, 29% of US military personnel reported ever using smokeless tobacco, compared to 30.9% of Missouri military personnel and 21.1% of Missouri civilians.

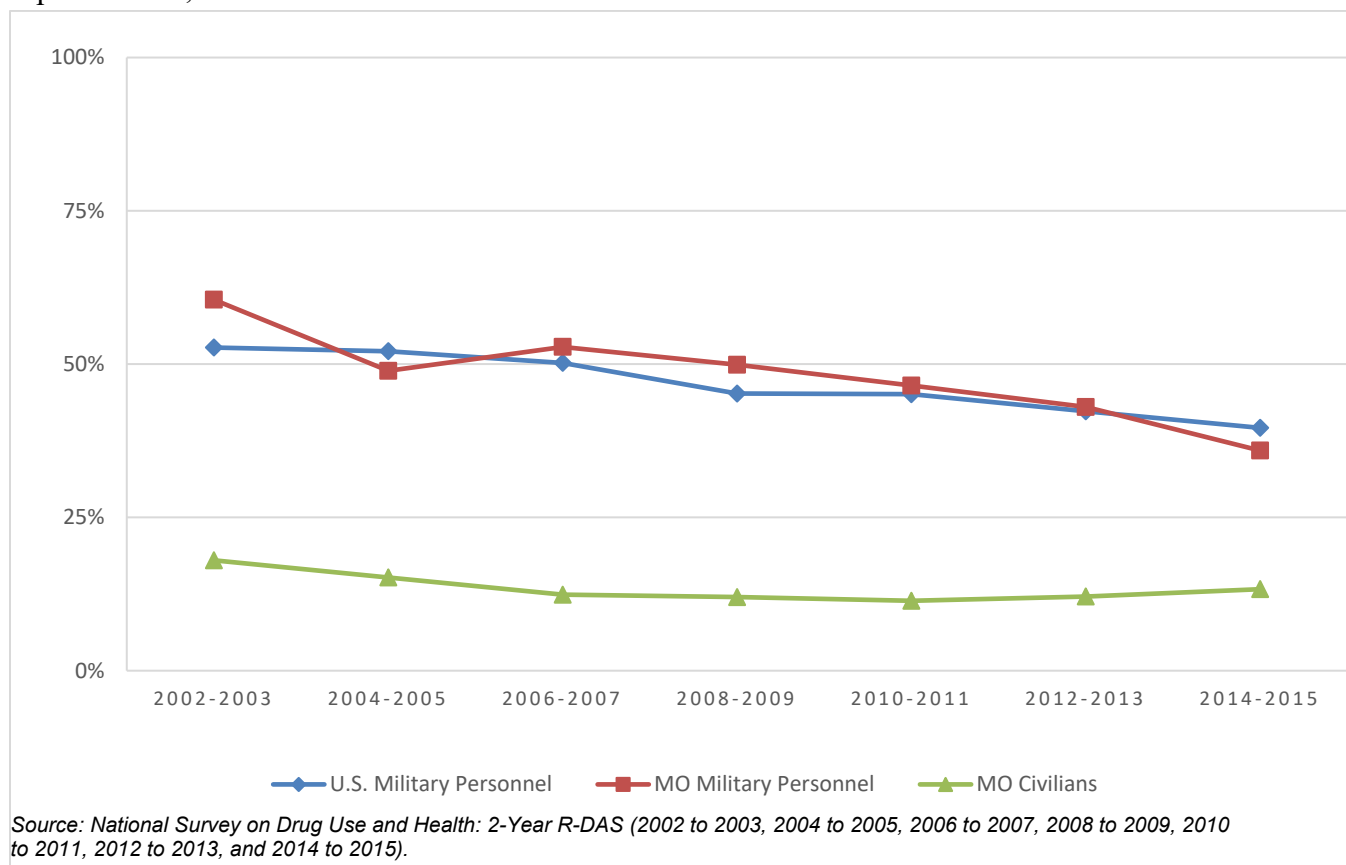
Figure 52: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Snuff or Chewing Tobacco, 2002-2013.



As with other tobacco products, military personnel tend to use pipe tobacco at a higher rate than civilians.

Pipe tobacco rates for military personnel have decreased slightly over time.

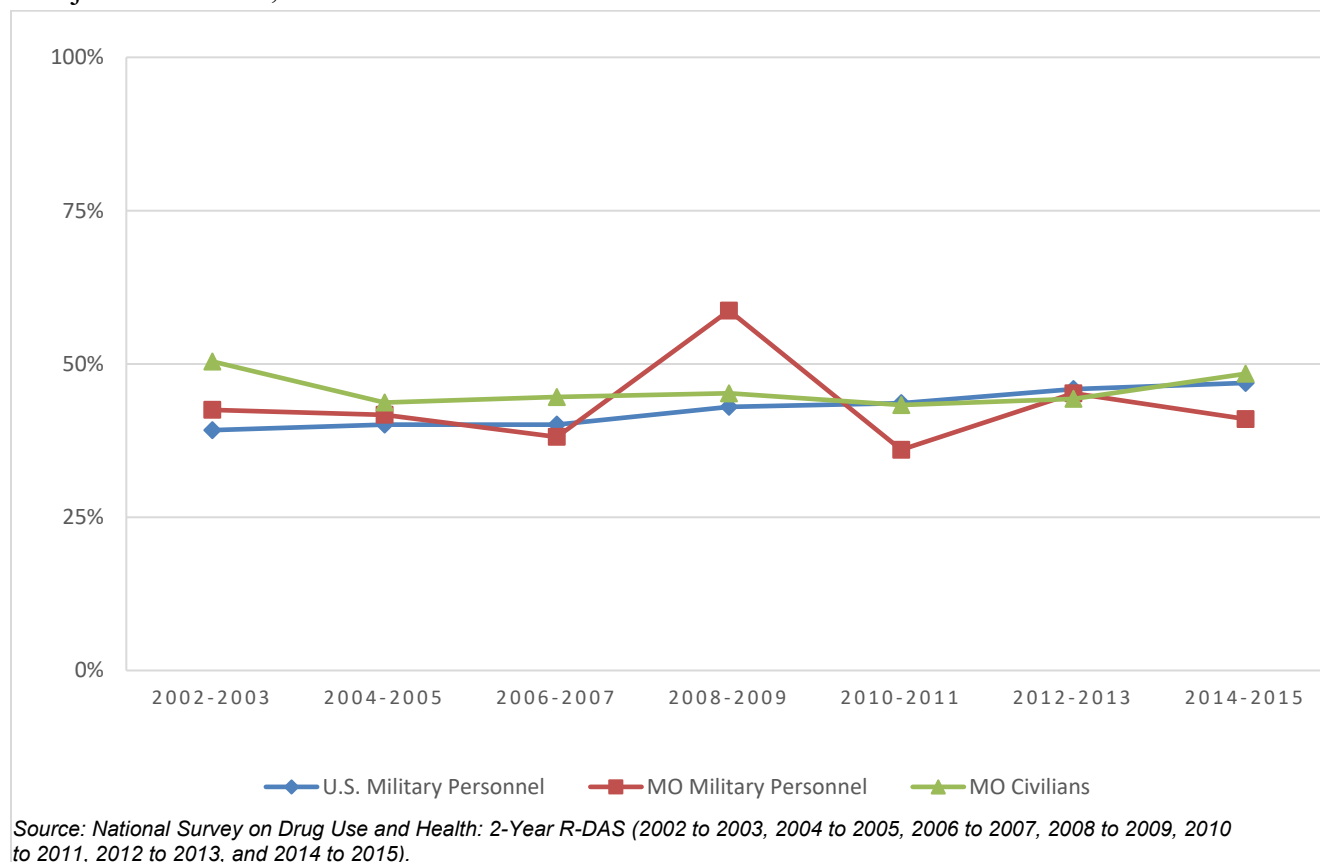
Figure 53: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked Pipe Tobacco, 2002-2015.



Marijuana

With the exception of a data anomaly in 2008-2009, rates for marijuana use have remained relatively steady and similar for all groups.

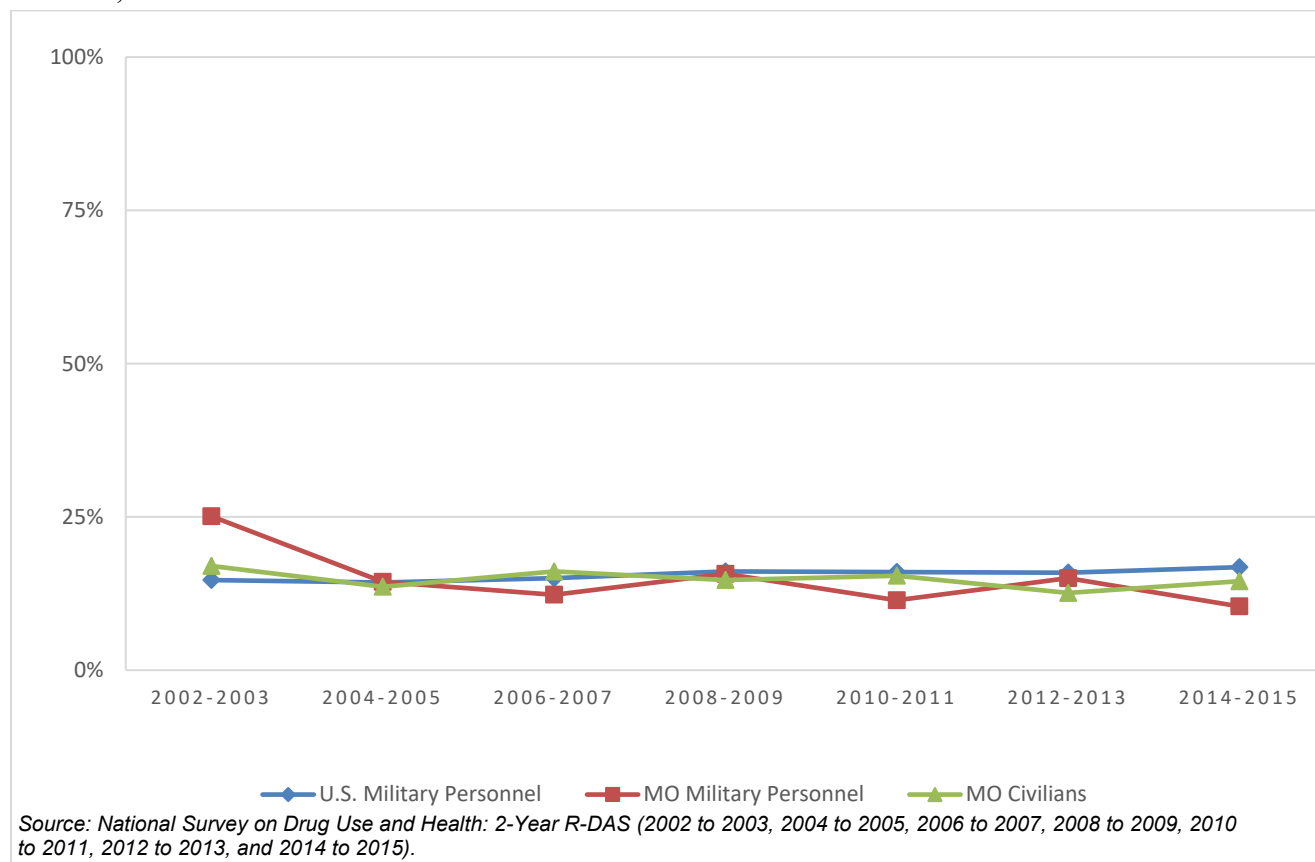
Figure 54: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Marijuana / Hashish, 2002-2015.



Illicit Drugs Other than Marijuana

Rates for cocaine use have also remained relatively steady and similar for all groups.

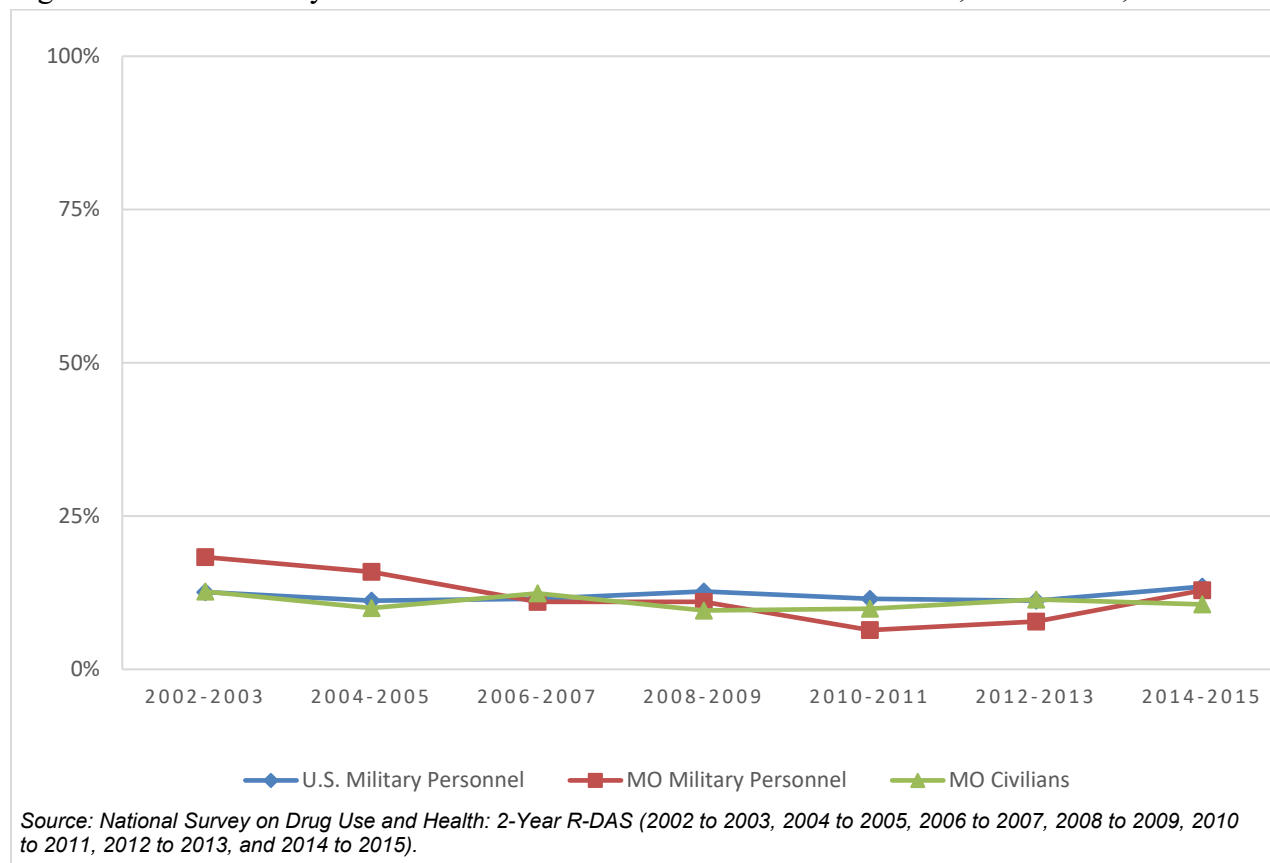
Figure 55: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Cocaine, 2002-2015.



In Missouri, the percent of military personnel who have ever used LSD has increased slightly since 2010-2011. The rate is similar among all groups.

Currently, more military personnel reported ever using LSD than civilians in Missouri.

Figure 56: % of Military Personnel & Civilians who have Ever Used LSD, in Missouri, 2002-2015.

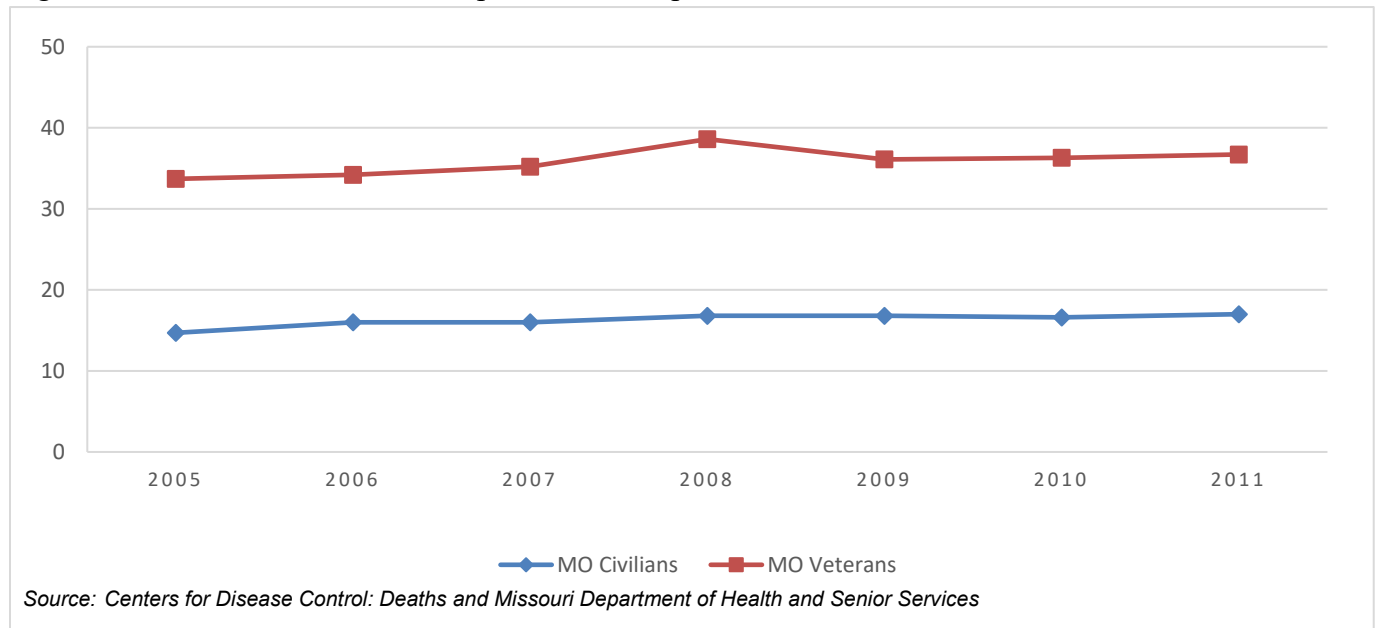


Mental Health Indicators

Although stable over time, suicide rates in Missouri among veterans are more than double those among civilians.⁶

Data after 2011 are not available.

Figure 57: Rate of Veteran Suicides per 100,000 Pop, in Missouri, 2005-2011.



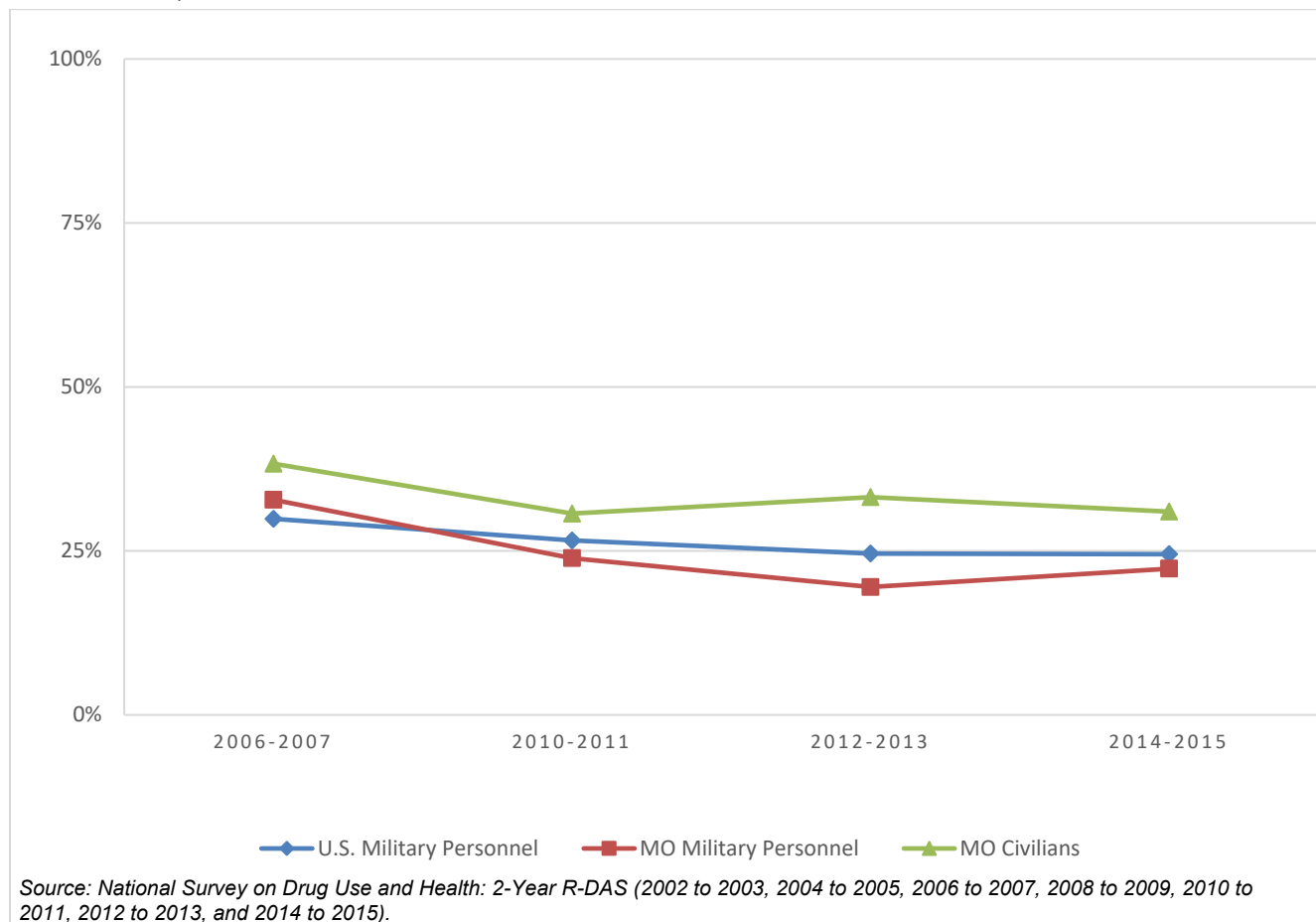
⁶ Rates presented here are crude rates and may differ from reports using age-adjusted rates.

The percent of all groups who reported feeling sad, empty, or depressed for several days or longer has decreased slightly since 2006-2007.

The rate of military personnel feeling sad, empty, or depressed for several days or longer is lower than the civilian rate.

Data were unavailable for the years between 2007 and 2010.

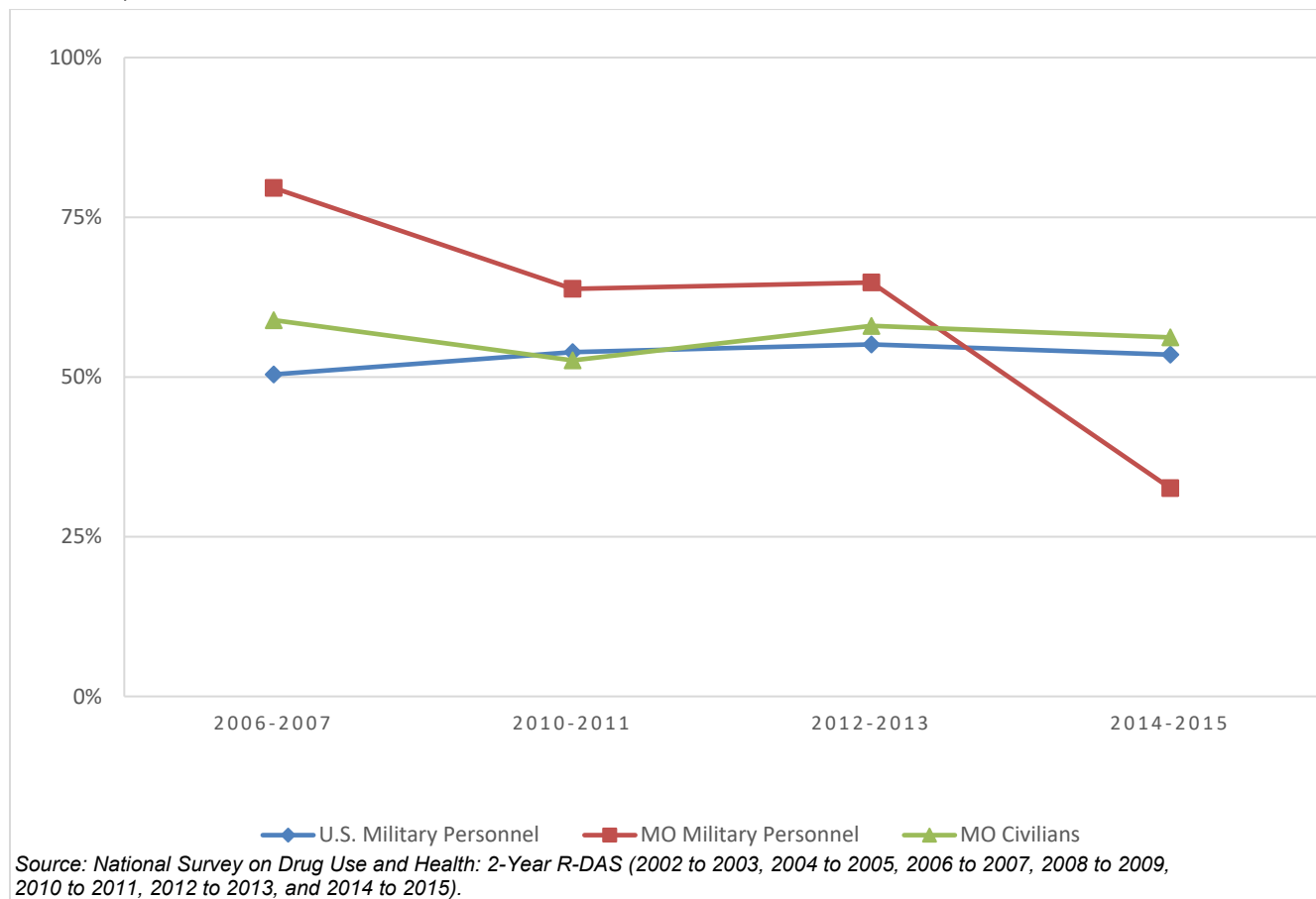
Figure 58: % of Military Personnel Who Felt Sad/Empty/Depressed for Several Days or Longer, in U.S. and Missouri, 2006-2015.



The percent of Missouri military personnel who reported feeling sad, empty, or depressed for two weeks or longer has decreased since 2006-2007.

Data were unavailable for the years between 2007 and 2010.

Figure 59: % of Military Personnel Who Felt Sad/Empty/Depressed for Two Weeks or Longer, in Missouri, 2006-2013.



Data Limitations and Gaps

This report attempts to provide an overview of the state of Missouri's behavioral health data. However, due to limitations in the data available and resources to write the report, there are gaps that remain.

For example, the risk and protective factors and in-depth mental health data lack high quality and national comparable data sources. Therefore, local data are used to explore these variables in order to have some indication of their current status in Missouri. Some inferences can be made with local data, but should be interpreted cautiously. Additionally, methodological issues may cause some variability with the data that is not a true reflection of population. Therefore, the lack of comparable numbers from other states and national level data makes it difficult to determine the relative magnitude of the issues in Missouri.

Another concern that needs to be taken into consideration is the use of risk and protective factors as defined by the Hawkins and Catalano Model, which only allows for middle and high school students to be examined with a single data source. This does provide a starting point; however, further efforts will have to be made to determine which risk and protective factors play a role in influencing the behavioral health of people across the lifespan.

Data quality was improved in 2016 with the introduction of a random sample at the state level; however, response rates are slightly less than desired.

Data on consequences are available at the state level from the national data set and are included in this report. However, stakeholders would like data on the cost to the state for each variable, but that data is currently unobtainable.

Data shows that individuals 18-21 and 21-25 years of age are the heaviest users for alcohol, tobacco, and other drugs so subpopulation data for these age groups would be most helpful. However, those ages 18-21 are not legally allowed to drink which raises concerns for this group's ability to access these substances. While there are some data available on usage rates from the national surveys, there is no information on risk and protective factors, where the young people are accessing the substances, or other information which could be used to target interventions for this high risk group. Additional, subpopulation data would also be helpful for the high-risk subpopulations the MO-BHEW identified in 2013: 1) military personnel, 2) homeless, 3) persons with a disability, and 4) LGBTQ individuals. The MO-BHEW was able to obtain some Missouri data for LGBTQ youth and veterans, and is currently in the process of exploring data sources for disabled persons and homeless individuals.

Current data for LGBTQ individuals is limited to a small sample of youth from the Missouri Student Survey. Data sources pertaining to substance use and mental health in this population will continue to be explored. Data on substance use in pregnant women would also be helpful but there is no current data source for this information.

Conclusions

Alcohol and tobacco are the two most commonly used drugs in Missouri and the overall past-month usage rates for alcohol are similar to the national average. Binge drinking is common among young (under 25) drinkers, raising concerns about risky drinking and the associated consequences. The past-month usage rates for cigarettes are increasing from 2011. Missourians aged 18 years and older had much higher daily usage rates for cigarettes than the U.S. population, while the daily usage rates among students are similar to the national average. Tobacco consumption related mortality rates are consistently higher than the national average.

While prescription drugs and illicit drugs are not as commonly used, the consequences of their use in Missouri tend to be higher than the national average. Risk and protective factor data indicated that youth consider e-cigarette use to be less risky than other drugs. Over-the-Counter Drugs are the most available drug. Those 18-25 and males tend to have the highest use rates across all drugs.

When examining the risk and protective factors, over one-third of all youth surveyed found drinking alcohol to be of no risk or slight risk, much more than that of cigarette smoking. Alcohol use was reported to be less wrong than other drug usage by the parents.

When examining the mental health variables that have nationally comparable numbers, depression and suicide are larger problems in the state than is average for the nation. White males are the most vulnerable to suicide.

Finally, the MO-BHEW identified two high-risk subpopulations with data on mental health and substance use: LGBTQ individuals and military personnel. LGBTQ students are more than twice as likely as heterosexual students to sometimes feel sad or depressed. They are at a much higher risk of suicidal thoughts as well. Missouri veterans and military personnel, similarly, are more likely than civilians and military personnel nationally to use tobacco. Missouri military personnel usage rates for marijuana and other illicit drugs are similar to civilian and American military personnel rates. However, veterans and military personnel are more likely to die by suicide and feel sad, empty, or depressed for two weeks and longer than civilians. Further, longitudinal research on veterans suggests that service members with combat exposures are at increased risk of alcohol-related problems, such as binge drinking, and an increase in smoking initiation.⁷ This additional information suggests that Missouri military personnel are a population that is at risk for substance use and mental health issues, and should continue to be monitored.

⁷ National Institute on Drug Abuse, (2011). *Topics in Brief: Substance Abuse among the Military, Veterans, and their Families* – April 2011. NIDA. Retrieved from <http://www.drugabuse.gov/sites/default/files/veterans.pdf>

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Appendix A - Data Sources, Indicators and Selection Criteria

Data Sources

Table 24: Data Sources

Name of Survey	Frequency of Reporting	Mode of Data Collection	Group Surveyed	Level Data Reported
Behavioral Risk Factor Surveillance System (BRFSS)	Annual	Telephone interview	Ages 18 or older, includes veterans	National, state, and Missouri Department of Health and Senior Services planning regions
National Survey on Drug Use and Health (NSDUH)	Annual	Face-to-face interview	Ages 12 or older, includes veterans	National but can also obtain state and sub-state planning regions by combining multiple survey years
Missouri Student Survey (MSS)	Every even numbered year	Web-based at school	Grades 6th - 12th but emphasis on 9th grade	State and county
Youth Risk Behavior Survey (YRBS)	Every odd-numbered year	Paper questionnaire at school	9th through 12th	National and State
National Vital Statistics System Mortality (NVSS-M)	Annual	Death certificate data	Population level	National and State – see Appendix A for more information

Additional State Level Data Sources:

Data Subject: Maternal drinking during pregnancy

Data Source: Missouri Department of Health & Senior Services

Report Name: Missouri Vital Statistics

Report Frequency: Annual

Record Source: Birth certificates

Recording Method: Check box

Data Strengths: Birth certificate data are collected for every live birth. Missouri has reciprocal reporting arrangements with most other states, so out-of-state births to Missouri residents are included. Beginning in 1989, medical condition information on birth records is collected using check boxes rather than the previous open-ended questions. The use of check boxes increased reporting of medical risk factors by 50 percent in 1989 compared to 1988.

Data Limitations: Drinking during pregnancy is substantially under-reported in the birth records. In 2007 and 2008, the Missouri Pregnancy Risk Assessment Monitoring System (PRAMS), administered a mailed stratified random sample survey to mothers of Missouri newborns. The survey found that 5.8 percent of mothers acknowledged drinking alcohol in the last three months of their pregnancies. The 95% confidence interval for that estimate is 4.6%-6.9%. Due to likely under-reporting on the survey, the actual drinking rate is probably higher than the survey estimate. During the same two-year period, birth records indicated 484 births in 2007 and 416 in 2008 involved maternal drinking during their pregnancies--a two-year total of 900 among 162,825 live births and a rate of only 0.55 percent. Thus, the actual rate of maternal drinking during pregnancy is probably at least 10 times the rate reported in the birth records.

Data Subject: Maternal smoking during pregnancy

Data Source: Missouri Department of Health & Senior Services

Report Name: Missouri Public Health Information Management System - Birth Missouri Information for Community Assessment (MICA)

Report Frequency: Annual

Record Source: Birth certificates

Recording Method: Check box

Data Strengths: Birth certificate data are collected for every live birth. Missouri has reciprocal reporting arrangements with most other states, so out-of-state births to Missouri residents are included. Beginning in 1989, medical condition information on birth records is collected using check boxes rather than the previous open-ended questions. The use of check boxes increased reporting of medical risk factors by 50 percent in 1989 compared to 1988.

Data Limitations: Smoking during pregnancy is under-reported in the birth records. In 2007 and 2008, the Missouri Pregnancy Risk Assessment Monitoring System (PRAMS), administered a mailed stratified random sample survey to mothers of Missouri newborns. The survey found that 20.1 percent of mothers acknowledged smoking in the last three months of their pregnancies. The 95% confidence

interval for that estimate is 18.2%-22.0%. During the same two-year period, birth records indicated 14,533 births in 2007 and 14,211 in 2008 involved maternal smoking during their pregnancies--a two-year total of 28,744 among 162,825 live births and a rate of 17.65 percent. Thus, the actual rate of maternal smoking during pregnancy is probably higher than the rate reported in the birth records.

Data Subject: Juvenile court out-of-home placements of children due to parental substance use / abuse (categorized according to parental alcohol use, drug use, or alcohol and drug use).

Data Source: Missouri Department of Social Services

Report Name: Unpublished report

Report Frequency: Provided annually to recipient requesting agency

Record Source: Statewide Automated Child Welfare Integrated System (SACWIS)

Recording Method: Information requested but not available as of the date the report is to be submitted.

Data Subject: Alcohol involved traffic crashes (categorized as fatal, non-fatal, and non-injury crashes) and injuries (categorized as fatalities and non-fatal injuries)

Data Source: Missouri Department of Public Safety, State Highway Patrol, Statistical Analysis Center

Report Name: Unpublished report

Report Frequency: Provided annually to recipient requesting agency

Record Source: Missouri Uniform Accident Report

Recording Method: Check box

Data Strengths: Uniform Accident Report has a check box for alcohol as a probable contributing circumstance, based on the judgment of the investigating officer. There are check boxes for alcohol involvement for drivers and passengers. Data have been collected for many years. Data can be amended if Blood Alcohol Content (BAC) testing later indicates the offer was incorrect in their initial assessment; this is most often done in electronic records (approximately 1/3 of all reports are electronic).

Data Limitations: The check box system is not based on an objective method or a specific BAC threshold to determine whether alcohol contributed to the crash. The classification of alcohol involvement is different than the .01+ percent BAC criteria used by the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS).

Data Selection

For the last 16 years, DBH (formerly ADA) has produced an annual Status Report with data on alcohol and drug use across the state. This report includes data from national surveys as well as some local data where available. This historical data collection, in combination with the indicators listed in the guidance document, led to the choice of indicators covered. NSDUH was chosen as the primary data source (where available) over BRFSS due to its historical use in Missouri. However, when BRFSS data are used, data by gender are included, as that is not available in NSDUH.

Similarly, Missouri State Highway Patrol (MSHP) data were used instead of NHTSA. Traditionally, these were used as MSHP only reports those known to have alcohol involvement while NHTSA attempts to estimate the percentage that were alcohol related from the pool of unknown.

Where State Epidemiological Data System (SEDS) data were not available, local sources were used to provide some information on the indicator, although they may not be as valid or reliable.

Mortality Data

Note that the following ICD-10 codes were used to define the mortality categories. Data can be queried at <http://wonder.cdc.gov/ucd-icd10.html>.

Cardiovascular and Ischemic Cerebrovascular Disease	I20–I25 and I60-69, I00-I09, I11, I13, I26-I51(exclude I32, I39, I41)
Chronic Liver Disease & Cirrhosis	K70, K73-K74
COPD And Emphysema	J43-J44
Drug Related Behavior	F11- F16, F18-F19, F55 and G62
Drug Related Poisoning	X40-X44, X46, X60-X64, X66, Y10-Y14 and Y16
Homicide	X85-Y09 and Y87.1
Lung Cancer	C34
Suicide	X60-X84 and Y87.0
Prescription Drugs	T36-T39, T40.2-T40.4, T41-T43.5, and T43.8-T50.8 [prescription OPR (T40.2-T40.4), benzodiazepines (T42.4)]